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SASKATCHEWAN WHEAT POOL



Marquis Thatcher Apex Renown Regent Rival

JUNIOR CO-OPERATIVE VARIETY TESTS

1939

FOREWORD

*By the President of Saskatchewan Co-operative
Wheat Producers Limited*

For the fifth successive year the Saskatchewan Wheat Pool, in co-operation with the University of Saskatchewan and the Dominion Experimental Farms and Stations, has sponsored a province-wide variety testing programme.

The data contained herein represent the results of the 1939 testing projects with wheat and flax.

In view of the controversy which developed during the past growing season regarding the respective merits of the new rust-resistant varieties and the older standard varieties this year's wheat test is of more than ordinary interest. Consisting of five rust-resistant varieties, together with Marquis, it furnishes reliable information on the varieties used, when grown under the different soil and climatic conditions existing throughout Saskatchewan. Including two new rust-resistant wheats, i.e., Regent (formerly known under the No. 975.1) and Rival (a new variety developed at the North Dakota Experimental Station) it also gives for the first time valuable and complete information in regard to the comparative yields and other agronomic characteristics of these varieties.

The flax project is also of considerable importance. The tests were located in the areas most suited for flax production. Four varieties were used in each test, including Royal, a new variety which has been released during the past season.

In all, the 1939 projects consisted of 363 tests, 341 tests with wheat varieties, and 22 tests with flax varieties. That these projects were brought to a successful conclusion is entirely due to the efforts of each Junior Co-operator who so willingly carried out the exacting work involved. Our thanks are due to each one of them.

J. H. WESSON.

INTRODUCTION

ONCE again Canada is at war and a nation's energies are turned towards obtaining victory over forces which threaten freedom.

Hope burns strongly that out of the turmoil of human conflict will come a world where understanding and co-operation will end disputes and wars will be no more.

But even in an age of peace and goodwill among men, there is a struggle which must continue. The fight against disease must go on and all the resources of science must remain mobilized. The fight is directed at more than human ailments. Disease constantly threatens animal and plant life essential to the good of humanity. Much remains to be done, but much has been accomplished.

This report tells part of the story of the struggle against plant disease. To the people of Western Canada the campaign is of vital importance. All too often they have seen crops of promise stricken by disease and ruined. During the past year the West has seen a signal victory. Stem rust, one of the most virulent diseases affecting the wheat plant, has been defeated. Across the western prairies wheat varieties resistant to rust stand on guard against further heavy losses from this disease.

The battle against rust has been strenuous. Years of study to find its vulnerable points were necessary before final victory. To the scientists who made this triumph possible, those who work the land gladly acknowledge their indebtedness.

But it is not sufficient that a wheat variety withstand only rust attack. It must also possess qualities which will avert other dangers. It must be able to resist drought, insect pests and other diseases. Its straw strength, height and bushel weight must be satisfactory and its milling qualities must be of a desirable nature.

To produce a new variety which will meet all the requirements of the grower, the miller and the consumer is the ultimate goal of the plant breeder.

The development of a new variety is a long, arduous task. Even when the variety has been developed the work is not done. Before it can be released for distribution it must be subjected to laboratory tests and the rigid requirements of the scientists must be met. Field tests under the different soil and climatic conditions existing in the region where the new variety is to be put in service must be made. Weather conditions vary from season to season and to ascertain the reaction of the variety these field tests must continue for a number of years.

Considerable testing work is carried out at experimental farms and stations but in order that complete information may be obtained it is necessary that these tests be supplemented by others subject to all soil and climate variations existing in the area where the varieties are to be used.

In a recent paper addressed to the annual meeting of the American Society of Agronomy at Washington, D.C., Dr. J. B. Harrington, Professor of Field Husbandry of the University of Saskatchewan, states in part:

"The present trend in the comparative testing of new varieties or treatments is toward having a large number of tests well distributed. The many combinations of climatic, soil and topographical conditions which occur in any large agricultural area are represented very roughly at the best by the

results obtained on the existing experiment stations. The station tests give results which apply precisely to only the very limited environments of the stations and therefore serve satisfactorily only the few farmers who reside close by. The remaining farmers, possibly 90 per cent. of the total number, have to be satisfied with more or less misleading approximations, unless, in addition to the station tests, supplementary local tests are conducted.

"The situation is well illustrated in the Province of Saskatchewan. There are five experiment stations in the Province serving a block of farming country roughly 400 miles by 300 miles with a large diversity of soils and climates and a total of nearly 20,000,000 acres devoted annually to grain crops. It is generally considered that the results obtained at the experiment stations, augmented occasionally by some co-operative tests with farmers, are inadequate particularly when information on the comparative performance of new varieties is desired urgently by farmers in all parts of the Province. . . .

". . . it would seem that in order to ascertain quickly the comparative performance of new varieties of an important crop in the different parts of a large agricultural area, literally hundreds of tests should be run for at least two representative years."

To assist this supplementary testing of wheat varieties over all Saskatchewan, the Wheat Pool, working in co-operation with the University of Saskatchewan, sponsors a province-wide programme. These tests cover the entire wheat-producing area and provide accurate and detailed information on the comparative values of the varieties. It is believed to be one of the largest testing projects ever conducted.

In addition to the wheat tests, similar information is assembled on flax varieties.

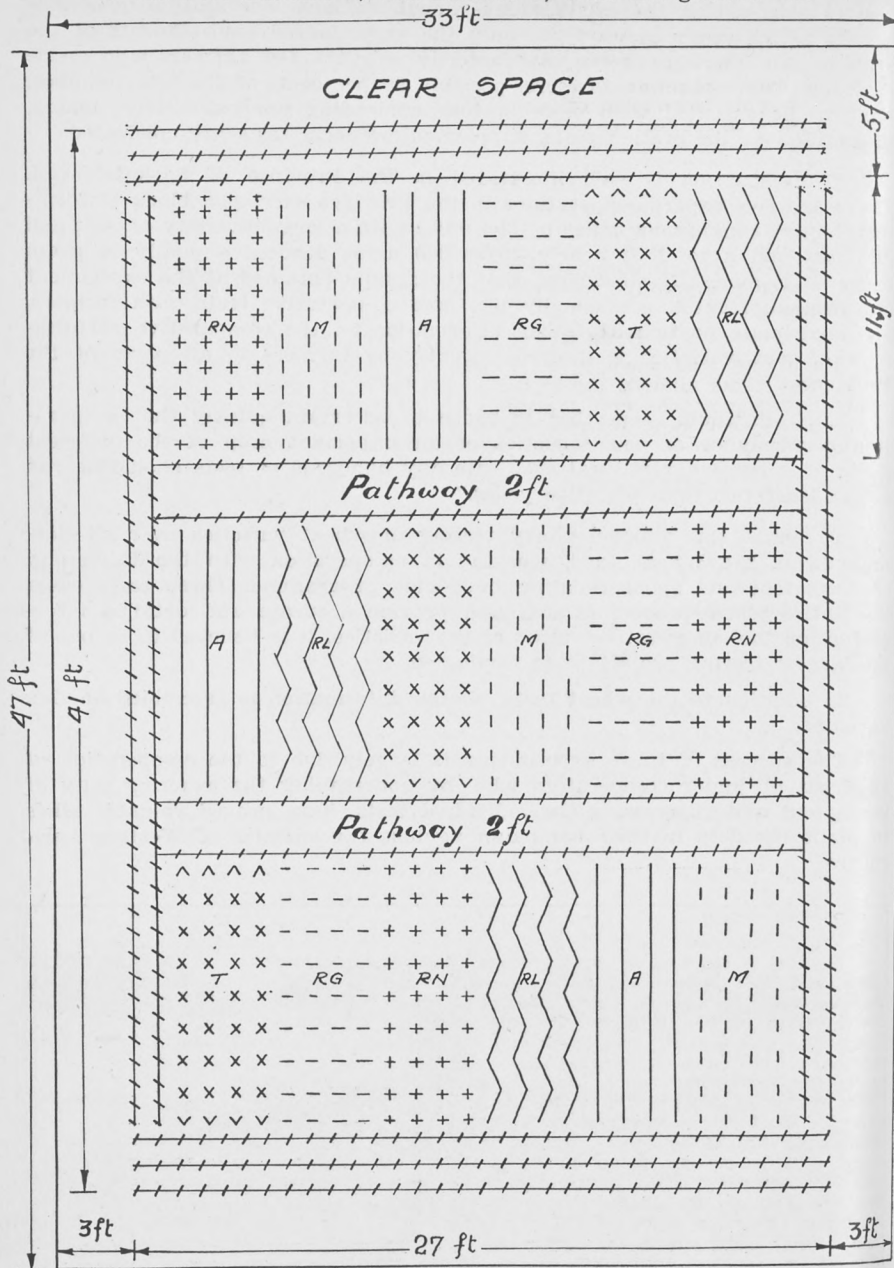
The success of these experiments is largely due to the co-operation of hundreds of junior co-operators who, by undertaking the exacting duty of laying out and supervising the individual tests, have proved valuable allies to plant breeders in their campaign against the enemies of Western agriculture.



Test No. 115 supervised by Donald Wood, Indian Head. Land location 2-19-13-W2nd. (One shallow hoeing was given when weeds were small and easily killed).

Plan of Test No. 1

Wheat Pool District 1, Sub-District 1, Test Designation "A"



LEGEND

MARQUIS	|||| M
THATCHER	xxxx T
APEX	— A
RENOWN	++++ RN
REGENT	---- RG
RIVAL	~~~~ RL
WINTER WHEAT	++++ W.W

The above plan shows the distribution of the varieties in the test conducted by Walter Harold Johnson of Gainsborough, in Wheat Pool District 1, Sub-district 1, Test Designation "A". The distribution of the varieties was different in all cases, each test being separately randomized.

WHEAT VARIETIES

VARIETIES USED IN TESTS

The same varieties were used in each test; namely, Marquis, Thatcher, Apex, Regent (formerly known under the Number 975.1), and Rival (a new variety developed at the North Dakota Experiment Station.) All varieties with the exception of Marquis possessed rust resistant qualities.

LOCATION OF TESTS

For administration purposes the Saskatchewan Wheat Pool has divided the Province of Saskatchewan into sixteen districts. Each district is again divided into ten sub-districts. With some exceptions two or more tests were located in each sub-district. In all, the wheat project consisted of 341 tests, thus completely covering the entire grain-growing area of the Province.

DESCRIPTION OF THE TEST

Each test was sown in a modified latin square the size being 41 feet by 27 feet. This allowed for 18 plots of four rows, each row being 12 inches apart. Allowance was also made for an outside protection of winter wheat. Around the test at a distance of about three feet from the outside row of winter wheat two or more drill widths of oats were sown, which acted as a wind protection and sawfly trap. The whole test was divided into three sections with a pathway two feet wide between each section. In each of the three sections each variety was represented by one plot of four rows, each row being ten feet long. This arrangement made possible close comparisons between varieties and the significance of even smaller differences was possible by separately randomizing the plots of each test so that throughout the entire project the distribution of the varieties differed in each test.

The seeds were sown at a depth of 2½ to 3 inches, and each co-operator was requested to place the kernels about one-third to two-fifths of an inch apart in a manner uniform for all varieties, discarding any surplus seed left in a package after each row had been sown.

ORGANIZATION AND CO-OPERATION

Carefully selected Junior Co-operators were again appointed to act as test supervisors. Many of these co-operators were already experienced in this class of work. Some, however, had no previous experience, and to ensure that each test would be correctly sown exactly in accordance with the prescribed plan all co-operators were supplied with detailed information of the method to be employed, both in regard to laying out the test, and, also, in regard to the manner in which it was to be sown. To enable the co-operator to closely follow the method of randomization a coloured plan of each test showing the different distribution of the varieties was included in the instructions.

Weighing and assembling of the seed for the experiment was carried out in the Head Office of the Wheat Pool Organization in Regina. Since each test was separately randomized it was necessary that particular care be exercised to ensure that the co-operator would be able to easily follow the method to be employed in sowing the different varieties. In preparing the seed 341 sets of envelopes were required, each set being stamped 1—72 inclusive. The names of the different varieties were then marked on the envelopes according to the randomization for each test. The envelopes were then sorted according to varieties and sufficient seed of each variety (9 grams) was then weighed and placed in each envelope. After this was completed the envelopes, plainly marked with the row number and the name of the variety, were sorted in sets, each set arranged according to the randomization for that particular test and numbered according to the number allotted to the test. Thus the envelopes marked 1—4 contained the seed for the four rows of the first variety in each test to be sown in section one. Envelopes 5—8 contained seed for the four rows of the second variety in section one and so on down to the envelopes marked 69—72, which contained the seed of the variety to be sown last in section three of the test.

Sufficient winter wheat (1½ pounds) was also supplied for the outside protection rows.

In addition to the seed, 72 numbered wooden stakes were sent to each co-operator, 36 large stakes, and 36 small stakes. The large stakes were used for the inside rows of each plot, and the small stakes for the outside rows of each plot. The packages of seed of the different varieties, the necessary stakes, and the winter wheat were then placed in a cardboard con-

tainer, the container being numbered according to the number of the test, and mailed with the instructions to each co-operator.

During the growing season the co-operators were requested to furnish three reports covering the progress of the test. The first report which was to be completed and sent in to the Head Office of the Saskatchewan Wheat Pool by June 15th requested information in connection with the date of seeding, soil type, cultural treatment, soil moisture depth, and the amount of rainfall from the date of seeding to June 10th. Full details in regard to the dates of emergence of the different varieties, uniformity of stand, cut-worm, wireworm, and grasshopper damage, and also soil-drifting damage was requested in this report.

The second progress report was required to be completed and returned by July 15th. This report asked for information in regard to the dates of heading, insect damage not noted on the first report, the percentage of heads affected with covered smut, the number of loose smutted heads, and details in regard to weed interference. Information was also requested in regard to the percentage of stem rust which appeared on each variety.

In order that rust infection would be accurately reported a scale was also supplied which showed six degrees of rustiness computed on the basis of 100 representing the maximum surface covered by rust. This scale is shown on page nine.

The final report was required to be returned by September 1st, and requested information in connection with the height of each row, straw strength, date when most heads were ripe, the percentage of bird damage, the percentage of shattering, and the date of harvesting. The percentage of stem rust was also required to be noted on this report.

Space was provided on all of these reports for any remarks which the Co-operator wished to make upon subjects not specifically asked for in the instructions.

During the growing season the tests were inspected by District Representatives of the Wheat Pool Organization. Each representative was supplied with report forms, a list showing the randomization of the tests in his district and copies of the rust scale. The district representatives' reports provided a very valuable independent verification of the reports from the Junior Co-operators.

Before the tests were harvested further instructions were prepared and sent out to the test supervisors. In these instructions special attention was given to such points as the best time to harvest and how harvesting should be done. Each co-operator was requested to take particular care in the curing of the crop and in storing it until it was ready to be handed over to the local Wheat Pool elevator agent for shipment.

The co-operator was particularly requested to see that the two centre rows of each of the 18 plots were parcelled separately together with the stakes identifying them. Only a small portion of the straw was required to be retained with the heads. After the crop had been harvested it was then required to be thoroughly dried and the 18 bundles placed in the required number of gunny sacks and shipped to Regina. Special shipping tags were forwarded to each Pool Elevator agent in order that identification could readily be established when the sheaves were received for threshing. The sheaves were threshed at the Head Office of the Saskatchewan Wheat Pool.

Each two rows of the different varieties in each test were threshed separately, the amount of grain being then weighed, giving yield in grams per plot. This information was then entered on a specially prepared threshing report form. This report form enabled a record to be kept of the yield in grams of the two centre rows of the 18 plots in each test. A column was also provided for remarks in connection with colour, etc. After each test had been threshed the yields from the three plots of each variety were placed in one bag and thoroughly mixed in order that a uniform sample of the variety could be obtained. This sample was then cleaned, weighed in pounds per measured bushel, and the commercial grade was placed on each variety.

After all samples had been graded they were forwarded to Dr. R. K. Larmour, Professor of Chemistry, University of Saskatchewan, to be tested for protein.

The project was again arranged and supervised by Dr. J. B. Harrington, Professor of Field Husbandry, University of Saskatchewan.

The compiling, summarizing, and statistical work was carried out at the Head Office of the Saskatchewan Wheat Pool in Regina, under the supervision of R. F. Haddrell.

ANALYSIS OF DATA

In order that a study could be made of the yielding capacity, disease resistance, and general characteristics of each variety grown in the tests under the different soil and climatic conditions of Saskatchewan, all data in connection with the tests were compiled and analysed in Cereal Variety Zones. A change has recently been made in the division of Zones 1A and 1B. Zone 1A now consists of a relatively large area in the south centre and south-west of the province. Zone 1B now consists of a triangular area in the west reaching out from the Alberta border. The different Cereal Variety Zones are illustrated in the map on page eleven, and are described on page ten.

NAMES AND ORIGIN OF VARIETIES USED IN THE TEST

The names and origin of the varieties used in the test are given below:

Marquis

Marquis is a descendant of a cross made in 1892 by officials of the Central Experimental Farm, Ottawa, Ontario, between an early ripening wheat, obtained from India under the name of Hard Red Calcutta, and Red Fife. It was isolated in 1903 by the late Sir Charles E. Saunders, then Dominion Cerealists, and was first sent to Western Canada for trial on branch farms in 1907.

Thatcher

Thatcher was produced from a cross made in 1921 at the Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, Minnesota, between (Marquis x Iumillo) x (Marquis x Kanred.) The primary aim was to obtain a wheat of high quality for milling and baking purposes that was resistant to black stem rust and of desirable agronomic type. From one of the original crosses (Marquis x Iumillo) a bread wheat type was obtained with a considerable degree of resistance to stem rust under field conditions. From the Marquis x Kanred cross, a spring wheat was selected of good milling and baking qualities that was immune to several forms of black stem rust, and of high yielding ability. Thatcher originated from a cross between these two.

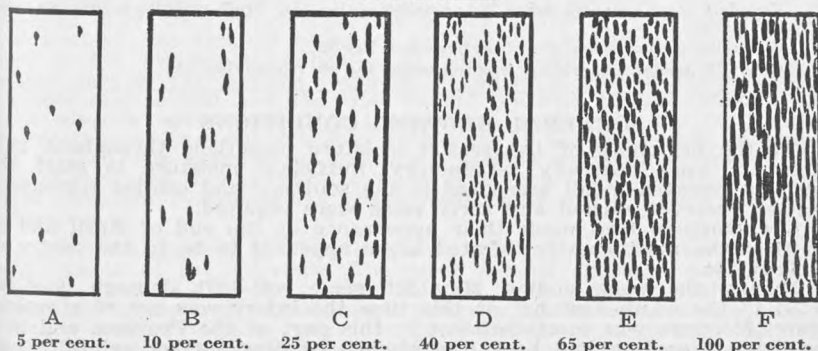
Apex

Apex was developed at the University of Saskatchewan, Saskatoon, from the composite cross (H.44-24 x Double Cross) x Marquis, the Double Cross being a sister of Thatcher from the cross (Marquis x Kanred) x (Marquis x Iumillo). The new strain Sask. 1789 was used in these tests. This strain is slightly earlier, higher in yield and higher in bushel weight than the original stock Sask. 1703 which is in general use.

Renown

This variety was produced at the Dominion Rust Research Laboratory, Winnipeg, Manitoba, from a cross between Reward and the rust-resistant variety H.44-24. The new strain R. L. 716.6 was used in these tests. This strain is slightly earlier, higher in yield and more resistant to leaf rust than the original stock R. L. 716 which is in general use.

RUST SCALE



Scale for estimating rust, illustrating six degrees of rustiness used in estimating the percentage of stem-rust infection. The shaded spots represent rust, and the figures represent approximately the rust percentages computed on the basis of the maximum of surfaces covered by rust as shown in the 100 per cent. figure (F). Figure F in the diagram represents 37 per cent. of actual rust-covered surface and is arbitrarily selected as 100 per cent. The other percentages are in terms of figure F.

Regent

Regent was obtained from a cross between H-44 and Reward, made at the Dominion Rust Research Laboratory at Winnipeg. Prior to 1939 it was known as R. L. 975.1.

Rival

Rival was developed at the North Dakota Agricultural Experiment Station from a cross between Ceres and a Hope-Florence hybrid. Florence appears to be the wheat which Luther Burbank distributed under the name of Quality. THIS VARIETY IS NOW IN USE IN NORTH DAKOTA AND MINNESOTA BUT TO DATE IT IS NOT LICENSED IN CANADA. IT WAS INCLUDED IN THIS TESTING PROJECT IN ORDER THAT SOME PRELIMINARY COMPARATIVE DATA MIGHT BE OBTAINED.

CEREAL VARIETY ZONES

An extract from a recent publication of the Saskatchewan Cereal Variety Committee, under the heading of "Variety Zones" is as follows:

Now, among all the influences on cereal varieties, it has been found that the soil-climatic environment is of major importance. There are four main soil-climatic zones in Saskatchewan; namely, 1, 2, 3, and 4. Comparatively small differences in precipitation, summer temperature, length of frost-free season and soil type affect markedly the comparative values of cereal varieties. To facilitate the making of specific variety recommendations, it has been necessary to divide the soil-climatic zones into cereal zones. The cereal zones are designated by the addition of a letter to the soil-climatic zone number. Thus cereal zone 2B is section B of soil-climatic zone 2.

While definite zones make necessary the exact location of boundary lines, the adjacent parts of two zones at their mutual boundary are sometimes more alike than different parts of the same zone. Some of these areas have light sandy soil, others have heavy wet soil, some are at a higher elevation than the surrounding country and receive extra precipitation, others may be low-lying and subject to frequent early frosts. The detailed soil map of Saskatchewan shows clearly the wide variations which occur in the soil character of any given zone.

Following are descriptions of the cereal zones:

Zone	Prevailing Soil Type and Climatic Conditions
1A.....	Open plains, brown soil, subject to frequent droughts.
1B.....	Open plains, brown soil, subject to frequent droughts.
2A.....	Open plains, dark brown soil; subject to occasional droughts; more rainfall than 1A.
2B.....	Open plains, dark brown soil; slightly cooler, drier, and more subject to drought than 2A.
2C.....	Bench land, dark brown soil; cooler with shorter frost-free season and more precipitation than 2B.
2D.....	Open plains, dark brown soil, higher elevation and distinctly shorter frost free season than 2B.
3A.....	Very dark brown and black soils; park land; more precipitation than 2A.
3B.....	Park land, deep dark soil, has distinctly shorter frost-free season and less rainfall than 3A, subject to frequent heavy damage from stem rust.
3C.....	Very dark brown and black soils, park belt; more rainfall than 2B but less than 2A.
3D.....	Deep black soil; park area; distinctly shorter frost free season and more rainfall than 2B.
3E.....	Very dark brown soil; park region, less precipitation than 3D. Much variation in frost free season and rainfall.
4A.....	Grey soils; wooded region; short frost free season like 3B.
4B.....	Grey soils, wooded area; shorter frost free season and less rainfall than 4A.

GENERAL GROWING CONDITIONS

At the beginning of the season moisture conditions throughout Saskatchewan were generally satisfactory. Sufficient moisture to start the crop was reported in all areas but in the southern and central regions no moisture reserves existed and early rains were required.

Grasshoppers first made their appearance at the end of April and at this time the most heavily infested areas appeared to be in the centre of the Province.

During the week ending May 5th some soil-drift damage was reported in the south-west but at this time the injury was not of a serious nature. Moisture was most deficient in this part of the Province and in a few districts seeding had been discontinued pending further rainfall. Generally a good rain was required in nearly all areas. Grasshoppers continued to emerge in many regions and cutworms were causing some injury in the south-east. Exceedingly high winds prevailed on May 9th. During the week ending May 12th considerable soil-drifting occurred. The most serious

Early in June generous and timely rains fell over the greater part of Saskatchewan's wheat growing area. In the central and northern regions this rainfall was of particular benefit. Unfortunately little or no precipitation was received in the south-east and in this portion of the Province a serious situation existed. Cool weather continued to prevail and generally the crop was somewhat backward.

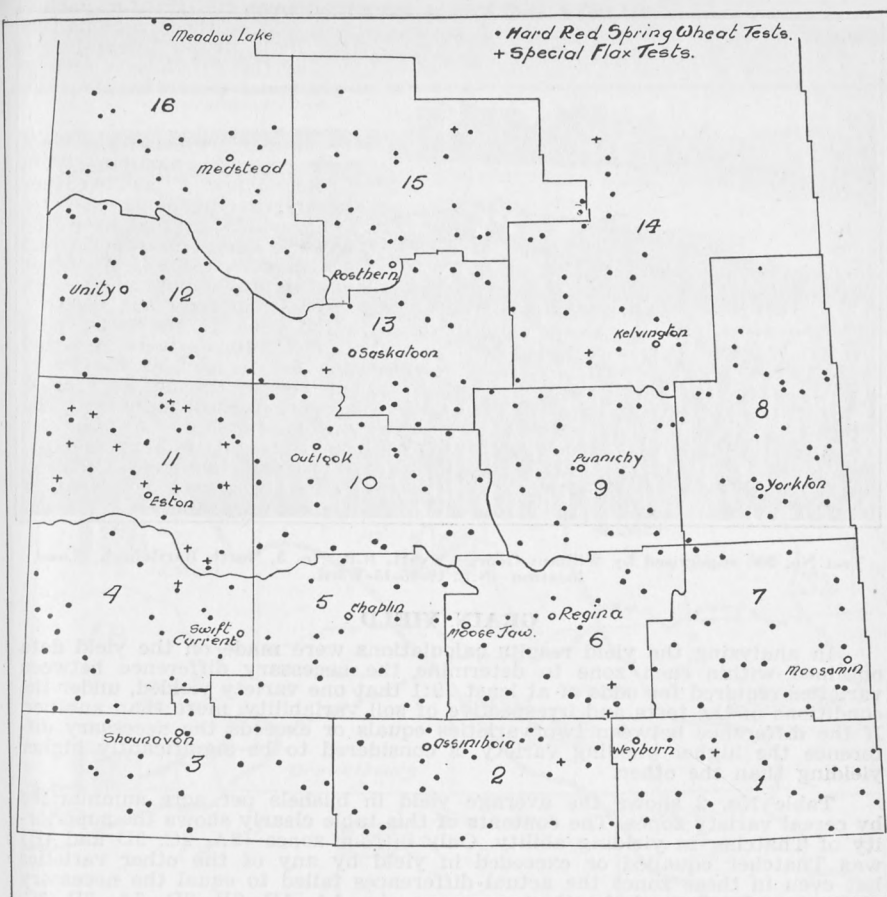
With an improvement in moisture conditions, higher temperatures were generally required to hasten growth. Frosts were reported, particularly in the east and north-west. Frequent rains and a continuance of cool weather occurred during June. About the middle of the month the south-east received moisture of varying amounts but at some points in this area the precipitation was too late to be of material assistance, and some reports had already been received that some tests were a complete failure. At other points in this part of the Province, while some improvement was noted, the tests had suffered severely. Grasshoppers were numerous but weather conditions continued to assist in checking their activities. In the latter part of June temperatures became somewhat higher. Hail storms were reported at scattered points but generally throughout the major part of the Province, the crop was in excellent condition. Only in the south-east were prospects unfavourable. Early soil-drifting, the long period of drought and the activities of grasshoppers had caused considerable damage. At the beginning of July moisture conditions remained generally satisfactory and the requirement of warmer weather to hasten development had been fulfilled. About the middle of the month, however, high temperatures and searing winds prevailed. Recordings of 100 degrees were noted in a number of points in the southern and eastern districts. Estevan with an official reading of 104 degrees, recorded the highest temperature. Lack of adequate moisture was apparent in many areas, the condition being particularly noticeable in the south-east. The grasshopper population had been increased by an invasion from Montana. Hordes of these insects descended into the most promising crops in the south-west. In other parts of the Province grasshoppers had reached the winged stage and were invading many fields which had hitherto been free of infestation.

While light showers fell at infrequent intervals, inadequate moisture with hot winds and to some extent grasshopper damage were responsible for the decline in conditions which continued throughout July. By the end of the month it was feared that heavy deterioration had occurred. On the heavier land, the summerfallowed fields appeared to be withstanding the unfavourable conditions fairly well but it was reported that the stubble fields in the south-east, south-centre and central regions and all crops on light lands in these areas had suffered severely. The north-west had also received a serious setback. The most favourable conditions appeared in the south-west, west-centre, north-centre and north-east.

Excessive heat with recordings of over 100 degrees together with the absence of rainfall continued to cause deterioration during the first week of August. The adverse weather conditions resulted in a further widening of the area in the south-east where severe damage had occurred. Yields in this area had been sharply reduced and premature ripening resulting in badly shrunken kernels had caused heavy lossess in quality. Steady deterioration was reported until August 17th when for the first time since the beginning of July the decline was halted. At this time, while no improvement had occurred in the standing crop, it was found that early threshing returns were somewhat higher than expected. As threshing advanced it was found that in most areas yields were considerably better than anticipated. This condition appeared to be particularly evident in the south-west, the west-centre, a portion of the north-centre and the north-east. Thus it was apparent, that although injury had occurred during July and the early part of August and that in some areas the damage was severe, the wheat crop withstood the adverse weather conditions much better than at first reported.

RAINFALL

As the amount of rainfall during the growing season has a far greater influence upon wheat yields than the amount of the annual precipitation, the rainfall shown in Table No. 1 covers only the months representing the growing period of the wheat in Saskatchewan, during 1939 (April to August). The table is arranged in Cereal Variety Zones and shows the number of points reporting in each zone, the average rainfall for each month and the amount of the heaviest precipitation in each month.



MAP SHOWING LOCATIONS OF TESTS

TABLE No. 1—Average total precipitation and average heaviest precipitation for months of April, May, June, July and August, 1939, in Saskatchewan Cereal Variety Zones with number of points reporting in each zone.

Cereal Variety Zone	No. of Points Reporting	Average Total Precipitation					Average Heaviest Precipitation				
		April	May	June	July	August	April	May	June	July	August
1A.....	10	.40	2.56	5.57	1.24	.62	.20	1.18	1.25	.58	.32
1B.....	9	.44	2.63	5.39	1.21	.49	.20	1.47	1.45	.40	.19
2A.....	8	.38	.93	4.67	.92	1.12	.14	.47	.95	.38	.51
2B.....	14	.35	1.30	6.00	1.49	.56	.15	.79	1.63	.66	.32
2C.....	1	.70	3.20	5.40	2.20	.30	....	....	....	....	....
2D.....	4	.39	1.19	5.43	1.02	.67	.17	.32	1.24	.37	.32
3A.....	7	.85	2.15	5.67	1.31	2.78	.22	.81	.85	.38	1.06
3B.....	1	.22	2.13	....	3.25	1.80	.16	1.60	....	2.00	.75
3C.....	10	.63	1.18	5.39	1.66	1.14	.28	.54	1.50	.91	.54
3D.....	4	.45	1.23	5.25	1.55	.82	.21	.32	1.45	.68	.36
3E.....	8	.54	1.31	4.12	1.15	.69	.22	.33	1.07	.60	.41
4A.....	1	.30	1.68	5.67	3.30	1.74	.13	.66	1.09	.96	.81
4B.....	1	.71	1.26	3.49	1.27	.36	.35	.35	1.19	.54	.15

Note.—Precipitation figures are obtained from meteorological reports furnished by the Provincial Government and cover only those points shown in the reports. No information covering the average precipitation throughout each cereal zone is available. (.... = No Reports)



Test No. 306 supervised by William George Wyatt, R.R. No. 3, North Battleford. Land location—N.E. 19-45-15-W3rd.

GRAIN YIELD

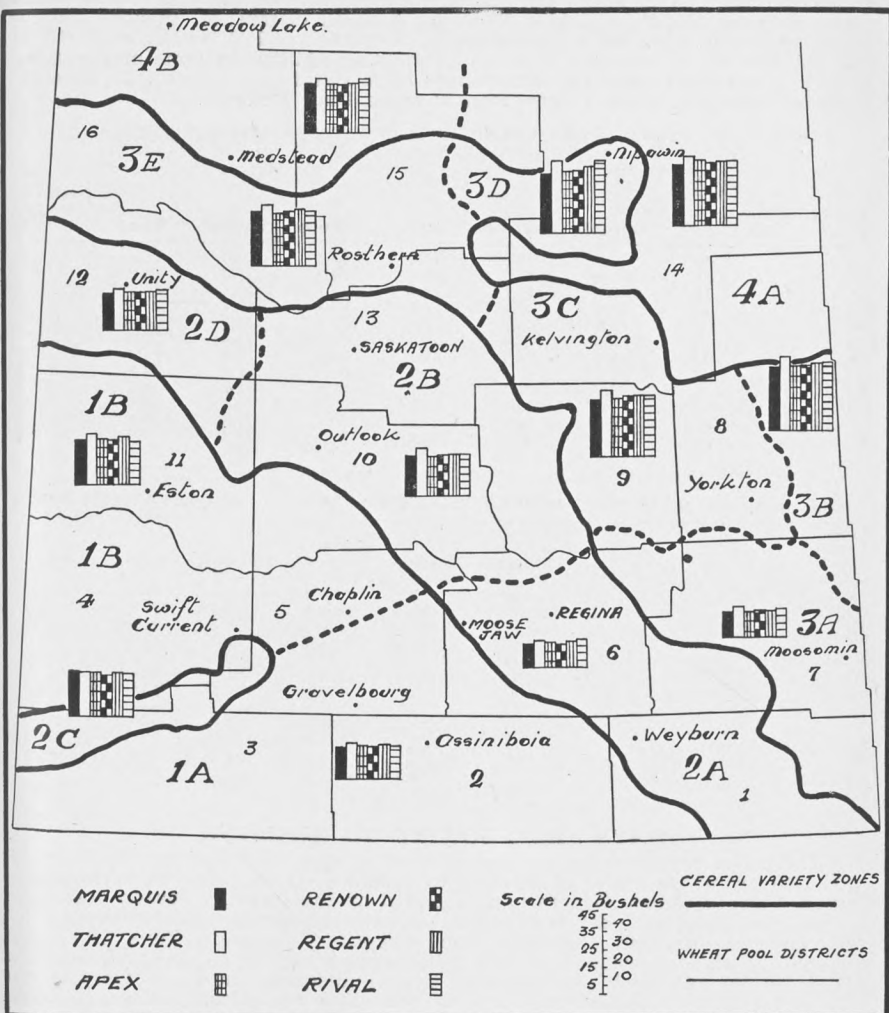
In analyzing the yield results calculations were made on the yield data obtained within each zone to determine the necessary difference between varieties required for odds of at least 19:1 that one variety yielded, under the conditions of the tests and irrespective of soil variability, more than another. If the difference between two varieties equals or exceeds the necessary difference the higher yielding variety is considered to be significantly higher yielding than the other.

Table No. 2 shows the average yield in bushels per acre summarized by cereal variety zones. The contents of this table clearly shows the superiority of Thatcher in yielding ability. Only in four zones (2A, 2C, 3D and 4B) was Thatcher equalled or exceeded in yield by any of the other varieties but even in these zones the actual differences failed to equal the necessary difference. In nine of the thirteen zones (i.e. 1A, 1B, 2B, 2D, 3A, 3B, 3C, 3E and 4A) Thatcher yielded significantly more than any of the other varieties. In zones 2A, 2C, 3D, and 4B Thatcher exceeded one or more of the other varieties by differences which exceeded the necessary difference for the zones. A general comparison shows that Regent ranked second in yielding ability but taking the tests as a whole the difference in yield between this variety and Thatcher was 2.3 bushels. Regent appeared to show most yield superiority in Zones 1A, 1B, 2A, 3C and 3E. In zone 1A, a portion of which suffered from drought conditions, Regent yielded significantly more than Rival, Renown or Marquis. In zone 2A where severe drought conditions existed, Regent outyielded Renown and Marquis by differences which exceeded the necessary difference for the zone. In zone 1B, Regent yielded significantly more than either Apex, Renown, Marquis or Rival. In zone 3C, it outyielded Apex and Marquis by differences which exceeded the necessary difference for the zone and in zone 3E it yielded significantly more than Renown, Marquis or Apex. The only other zones where Regent exceeded any of the other varieties by differences which equalled or exceeded the necessary difference were in zone 2B where it yielded significantly more than Apex and in zone 3D where it significantly outyielded Marquis.

A general comparison over the entire project shows Rival ranking third in yielding ability. A difference of only .2 bushel appeared, however, between the average yields of Rival and Regent. The Rival variety appeared to yield comparatively well in the southeast, a portion of the northwest, and parts of northeastern and northern areas. In the following zones it outyielded the varieties mentioned by differences which exceeded the necessary differences for the zones: 2A, Apex, Marquis and Renown; 2B, Apex; 2D, Marquis, Renown, Regent and Apex; 3A, Regent, Apex and Marquis; 3C, Marquis; 3D, Regent, Renown, Apex and Marquis; 3E, Apex; and 4B, Renown and Marquis.

HISTOGRAMS SHOWING YIELDS

The histograms shown below give a comparison of yields in bushels per acre of the different varieties in each Cereal Variety Zone.



Generally over the whole test Renown was fourth in yield, averaging 25 bushels per acre. The difference between this variety and Apex, however, was only .2 bushel. In the southern and western areas Renown was slightly outyielded by Apex but was somewhat superior to the latter variety in yielding ability in other regions. Some slight variations occurred in the different zones between the comparative yields of Renown and the other varieties but only in three zones did Renown exceed any of the other varieties by differences which equalled the necessary differences for the zones. These zones were as follows: 3A, where Renown yielded significantly more than Marquis or Apex; Zone 3C, where it also significantly outyielded Marquis and Apex and in Zone 3E where Renown outyielded Apex by a difference which slightly exceeded the necessary difference for the zone.

Averaging over the entire project 24.8 bushels per acre Apex ranked fifth in yield, yielding .3 bushel more than Marquis. In the following zones Apex outyielded the varieties mentioned by differences which equalled or exceeded the necessary differences for the zone: 1A, Marquis; 1B, Rival; 2A, Marquis; 4A, Marquis. While in the zones not mentioned above Apex

exceeded some of the other varieties in yield the differences were not of a significant nature.

Averaging over the whole test 24.5 bushels per acre, Marquis was low in yield. Only in five zones did Marquis exceed any of the other varieties in yield. In zone 1B it outyielded Rival by a small difference. In zone 2B and 3E it exceeded Apex by a difference of .4 bushel and .9 bushel respectively and in zone 4B it equalled Renown in yielding ability. In none of the zones already mentioned were the differences of a significant nature. In zone 2C, however, Marquis yielded significantly more than Renown.

TABLE No. 2.—AVERAGE YIELD IN BUSHELS PER ACRE SUMMARIZED IN CEREAL VARIETY ZONES.

Cereal Variety Zone	No. of Satisfactory Tests	Marquis	Thatcher	Apex	Renown	Regent	Rival	Necessary Difference in Bushels
1A.....	40	18.6	20.8	19.2	18.7	19.6	18.9	.6
1B.....	36	25.4	28.9	26.0	25.4	27.2	24.9	.8
2A.....	12	13.7	15.7	14.7	13.9	15.2	16.1	1.0
2B.....	39	22.8	27.1	22.4	23.1	23.4	23.5	.8
2C.....	7	25.6	25.1	25.0	23.1	24.7	24.0	2.0
2D.....	13	20.8	23.8	21.4	21.1	21.3	22.6	1.2
3A.....	22	14.9	18.0	15.0	15.9	15.4	16.2	.8
3B.....	7	36.0	41.8	36.3	36.8	37.8	38.4	2.6
3C.....	24	32.1	37.4	33.1	34.6	34.7	34.5	1.5
3D.....	9	33.5	40.8	34.7	35.1	37.3	40.9	2.8
3E.....	32	30.4	34.1	29.5	30.7	31.8	30.8	1.1
4A.....	11	34.6	39.1	36.8	35.4	36.4	36.6	2.1
4B.....	5	27.6	30.6	27.8	27.6	28.0	30.6	2.9

TABLE No. 3.—AVERAGE YIELD PERCENTAGE OF MARQUIS BY CEREAL VARIETY ZONES.

Cereal Variety Zone	Marquis	Thatcher	Apex	Renown	Regent	Rival
1A.....	100	111.8	103.2	100.5	105.4	101.6
1B.....	100	113.8	102.4	100.0	107.1	98.0
2A.....	100	114.6	107.3	101.4	110.9	117.5
2B.....	100	118.8	98.2	101.3	102.6	103.1
2C.....	100	98.0	97.6	90.2	96.5	93.7
2D.....	100	114.4	102.9	101.4	102.4	108.6
3A.....	100	120.8	100.7	106.7	103.3	108.7
3B.....	100	116.1	100.8	102.2	105.0	106.7
3C.....	100	116.5	103.1	107.8	108.1	107.5
3D.....	100	121.8	103.6	104.8	111.3	122.1
3E.....	100	112.2	97.0	101.0	104.6	101.3
4A.....	100	113.0	106.3	102.3	105.2	105.8
4B.....	100	110.9	100.7	100.0	101.4	110.9

DAYS FROM SOWING TO RIPENING

Table No. 4 shows the average number of days required by the different varieties from the date of sowing to ripening. This table is arranged in Cereal Variety Zones. Generally the length of the growing season was more normal than for the past few years. In most zones the maturity period for all varieties exceeded 100 days, the exceptions being in Zone 3A where drought conditions caused considerable premature ripening, and in Zone 2D, a portion of which also suffered from inadequate moisture. Only in one zone was Marquis earlier than any of the other varieties, this was in Zone 2C where Rival required 1.7 days longer to reach maturity. Thatcher and Renown were the earliest varieties. In Zone 2B Thatcher was slightly later than Renown. In Zone 2D it equalled Renown in its maturity period and in Zones 3A, 3C and 3E it was slightly later than Renown. In Zone 3B it was .7 day later than Renown. In Zone 3D Regent tied with Thatcher in its maturity period but in all other zones Thatcher was the earliest maturing variety, being generally slightly earlier than Renown. A general comparison over the whole test shows that Thatcher and Renown tied in earliness, each requiring 103.1 days to reach maturity. Regent was only .3 day later than these two varieties. In Zone 3A Regent excelled in earliness and in Zone 3E it equalled Renown and ripened earlier than the other varieties. Apex matured in an average of 104 days and Rival 104.1 days. Marquis, requiring over the whole test 105.1 days from sowing to ripening, was the latest maturing variety.

HEIGHT OF PLANTS

In Table No. 5 the height in inches of each variety is shown by Cereal Variety Zones. It will be observed that a decrease in height is apparent in all areas where moisture was most deficient. With the exception of zone

2C where it was slightly exceeded by Apex and Renown, Rival excelled in height in all zones while in all zones Thatcher was the shortest variety. Some variation occurred between the heights of the other varieties in the different zones but a general comparison covering the whole test showed that Rival, with an average height of 36.2 inches, was 1.4 inches taller than Marquis, its nearest competitor. Apex and Regent were only slightly shorter than Marquis, the latter having exceeded these two varieties in height by only .1 inch and .2 inch respectively. Over the whole test the average height of Renown was 34.4 inches. Thatcher averaged 33.8 inches in height. In all zones it was shorter than the other varieties by differences ranging from .1 inch to 3.7 inches.

TABLE No. 4.—AVERAGE NUMBER OF DAYS FROM SOWING TO RIPENING SUMMARIZED IN CEREAL VARIETY ZONES.

Cereal Variety Zone	Marquis	Thatcher	Apex	Renown	Regent	Rival
1A.....	108.6	108.8	108.4	107.1	107.1	108.2
1B.....	103.8	102.2	103.1	102.3	102.9	103.3
2A.....	102.6	100.8	102.1	101.5	101.2	101.6
2B.....	104.6	102.7	103.6	102.4	103.0	103.5
2C.....	113.3	109.8	110.8	111.2	112.7	115.0
2D.....	102.0	99.9	100.9	99.9	100.1	101.9
3A.....	99.7	98.0	98.9	97.9	97.8	98.3
3B.....	105.1	102.8	103.8	102.0	103.1	103.4
3C.....	107.0	104.7	105.3	104.6	104.9	105.6
3D.....	107.6	106.0	107.2	106.6	106.0	106.1
3E.....	104.5	102.1	102.8	102.0	102.0	103.0
4A.....	108.6	105.2	106.2	105.4	106.0	106.2
4B.....	109.4	106.0	107.0	106.6	106.4	107.8

TABLE No. 5.—AVERAGE PLANT HEIGHT IN INCHES SUMMARIZED IN CEREAL VARIETY ZONES.

Cereal Variety Zone	Marquis	Thatcher	Apex	Renown	Regent	Rival
1A.....	33.6	33.4	33.7	33.7	33.6	35.3
1B.....	34.2	33.1	34.0	33.5	33.9	35.5
2A.....	31.5	29.9	31.2	30.3	31.7	32.9
2B.....	34.2	33.4	34.2	33.7	34.0	35.7
2C.....	33.7	33.1	34.1	34.1	33.2	33.9
2D.....	32.8	32.1	33.0	32.4	32.3	33.3
3A.....	31.2	30.2	30.9	30.5	31.0	31.9
3B.....	37.1	35.2	35.9	37.5	36.6	37.7
3C.....	37.9	37.0	38.3	38.2	38.4	39.9
3D.....	38.0	37.0	38.1	37.5	39.0	40.7
3E.....	37.5	36.3	37.1	37.1	37.4	39.2
4A.....	38.2	35.8	37.8	37.6	36.7	39.1
4B.....	39.3	36.7	37.8	38.2	38.5	39.5

STRAW STRENGTH

Straw strength was reported on a basis of 0 to 10, 10 being recorded if the plants were straight and erect. If the plants tended to lean slightly or were slightly curved at the base the straw strength would be shown as 9. The greater the lean the greater proportion of leaning plants, the lower the figure shown until if the plants were flat upon the ground, they would receive 0 for straw strength. Table No. 6 shows the strength of straw of the different varieties in each Cereal Zone based on the markings 0 to 10 as mentioned above.

In six out of thirteen zones Thatcher either equalled or exceeded all other varieties in straw strength and in nine zones Apex was inferior in this characteristic to the other varieties. Some variation in comparative straw strengths occurs in the different variety zones but a general comparison over the whole project shows Thatcher to be superior to all other varieties. This comparison shows that Marquis and Renown tied in this characteristic and generally showed only slightly weaker straw than Thatcher. Taking the tests as a whole Rival was slightly superior in straw strength to Regent and somewhat superior to Apex. In some zones, however, especially in the eastern part of the Province, Rival was particularly weak in this characteristic. Generally Regent ranked fifth in straw strength. In Zone 1B it appeared to be slightly inferior to all varieties and exhibited most superiority in Zone 4A. In nearly all zones Apex was weaker in straw than any of the other varieties. A general comparison over the whole project showed that Apex was somewhat inferior in this characteristic to Rival and Regent and decidedly inferior to Thatcher, Marquis and Renown.

TABLE No. 6.—COMPARISON OF STRAW STRENGTH SUMMARIZED IN CEREAL VARIETY ZONES—Basis 0-10.

Cereal Variety Zone	Marquis	Thatcher	Apex	Renown	Regent	Rival
1A.....	9.1	9.1	8.8	8.7	8.8	9.2
1B.....	9.2	9.1	9.1	9.2	9.0	9.1
2A.....	9.1	9.4	8.8	9.2	9.1	9.0
2B.....	9.3	9.3	8.6	9.3	8.9	9.1
2C.....	9.1	9.1	8.2	8.9	8.9	9.5
2D.....	9.2	9.6	9.3	9.4	9.2	9.4
3A.....	8.9	9.0	8.3	8.9	8.8	8.6
3B.....	8.7	9.1	7.9	8.5	8.0	8.4
3C.....	8.7	8.7	8.2	8.8	8.6	8.5
3D.....	8.8	9.3	8.1	9.3	9.1	9.2
3E.....	9.0	9.2	8.4	9.4	9.1	8.8
4A.....	8.8	8.9	8.4	9.0	8.9	7.9
4B.....	10.	9.8	9.5	9.9	9.6	9.7

WEIGHT PER MEASURED BUSHEL

Table No. 7 shows the average weight per measured bushel arranged in cereal variety zones. Weights were taken on cleaned samples. From this table it will be observed that with two exceptions Renown excelled in bushel weight in all zones. The exceptions were in Zones 1A and 1B. In Zone 1A it was exceeded in weight by Rival, Apex and Marquis by .2 lb., .7 lb., and 1.3 lbs. respectively. In Zone 1B it tied with Apex in bushel weight. Taking the project as a whole Renown showed an average bushel weight of 61.7 lbs. outweighing the other varieties by the following differences: Marquis .2 lb., Apex .4 lb., Rival .8 lb., Thatcher 1.2 lbs., and Regent 2.1 lbs. Marquis closely followed Renown in bushel weight in nearly all zones. In Zone 1A it outweighed all other varieties. In the eastern part of the province, however, it appeared to be somewhat outweighed by Apex as well as Renown. In Zones 1A and 2A, Apex was superior in weight to most of the other varieties. It also weighed comparatively well in Zone 1B, where it equalled Renown and exceeded the other varieties. Over the whole project Rival averaged 60.9 lbs. and was fourth in bushel weight. This variety exhibited most merit in Zone 1A where it outweighed Renown, Thatcher and Regent by differences of .2 lb., .7 lb., and 1.7 lbs. respectively. Thatcher, averaging 60.5 lbs. per bushel, ranked fifth in weight, its comparative weight being quite similar in nearly all zones. Regent averaged 59.6 lbs. over the whole test and was consistently outweighed by all other varieties in all zones.

TABLE No. 7.—BUSHEL WEIGHT IN POUNDS (CLEANED) BY CEREAL VARIETY ZONES.

Cereal Variety Zone	Marquis	Thatcher	Apex	Renown	Regent	Rival
1A.....	60.0	58.2	59.4	58.7	57.2	58.9
1B.....	61.4	60.4	61.5	61.5	59.6	60.7
2A.....	59.4	58.5	59.4	60.2	57.4	58.6
2B.....	61.7	60.5	61.3	61.8	59.6	61.1
2C.....	63.8	62.9	63.3	64.0	62.4	62.7
2D.....	62.1	60.6	61.8	62.3	59.8	61.6
3A.....	58.1	57.5	58.3	58.6	55.4	58.0
3B.....	63.5	63.2	63.7	64.1	62.7	63.1
3C.....	62.6	62.1	62.6	63.4	61.3	62.3
3D.....	63.3	63.6	63.8	64.6	62.4	63.2
3E.....	62.7	61.9	62.5	63.4	61.0	62.0
4A.....	63.5	62.9	63.3	64.1	62.4	63.1
4B.....	63.7	63.2	63.6	64.3	62.8	63.1

COMMERCIAL GRADES

Table No. 8 shows the percentage of the commercial grades placed on each variety. This table is arranged by Cereal Variety Zones. It will be observed that taking the project as a whole Apex, despite some inferiority in bushel weight, was approximately equal in commercial grades to Renown and showed somewhat better grades than Marquis. However, in zones 1A, 1B, 2B, 2D, 3A, 3C, 3E, and 4B Renown appeared to be somewhat superior in grades to the Apex variety, better weight together with a smaller percentage of shrunken kernels and the absence of kernels affected by black point giving the Renown variety an advantage. In the other zones Apex equalled or excelled the other varieties. Marquis ranked third in

TABLE No. 8.—PERCENTAGE OF COMMERCIAL GRADES BY CEREAL VARIETY ZONES.

Cereal Variety Zone	Varieties	% 1 Hd.	% 1 Nor.	% 2 Nor.	% 3 Nor.	% 4 Nor.	% No. 5	% No. 6	% Fd.	% 4 Sp.	% 5 Sp.	% 6 Sp.	% Rej. 1°	% Rej. 2°	% Rej. 3°	% Sam- ple
1A.....	Marquis.....	23	26	16	14	12	2	2	—	2	3	—	—	—	—	—
	Thatcher.....	14	21	19	12	11	—	—	—	21	—	2	—	—	—	—
	Apex.....	21	30	14	16	2	—	2	—	12	3	—	—	—	—	—
	Renown.....	26	28	14	9	16	—	—	—	5	2	—	—	—	—	—
	Regent.....	4	21	21	12	12	7	—	7	7	7	2	—	—	—	—
	Rival.....	16	30	16	12	7	—	—	2	9	5	3	—	—	—	—
1B.....	Marquis.....	46	24	11	8	3	5	—	—	—	3	—	—	—	—	—
	Thatcher.....	35	24	14	5	8	3	—	3	5	3	—	—	—	—	—
	Apex.....	46	19	11	11	8	—	3	—	2	—	—	—	—	—	—
	Renown.....	57	8	11	11	3	—	3	—	5	2	—	—	—	—	—
	Regent.....	22	32	16	6	5	8	—	5	3	3	—	—	—	—	—
	Rival.....	43	24	11	8	3	3	3	—	3	2	—	—	—	—	—
2A.....	Marquis.....	25	19	25	—	—	—	—	—	25	6	—	—	—	—	—
	Thatcher.....	12	31	19	6	13	—	—	—	—	6	13	—	—	—	—
	Apex.....	31	25	—	12	13	—	—	—	6	13	—	—	—	—	—
	Renown.....	25	44	—	—	12	—	—	—	19	—	—	—	—	—	—
	Regent.....	6	19	31	13	—	13	—	6	—	6	6	—	—	—	—
	Rival.....	19	19	19	12	13	—	—	6	—	6	6	—	—	—	—
2B.....	Marquis.....	33	41	8	8	—	2	—	—	8	—	—	—	—	—	—
	Thatcher.....	31	31	21	2	—	5	—	—	8	2	—	—	—	—	—
	Apex.....	38	41	3	3	5	—	—	—	5	5	—	—	—	—	—
	Renown.....	44	33	—	10	3	—	—	—	8	2	—	—	—	—	—
	Regent.....	15	33	26	8	—	3	5	—	—	10	—	—	—	—	—
	Rival.....	38	33	10	3	5	3	—	—	8	—	—	—	—	—	—
2C.....	Marquis.....	77	23	—	—	—	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	77	11	12	—	—	—	—	—	—	—	—	—	—	—	—
	Apex.....	77	23	—	—	—	—	—	—	—	—	—	—	—	—	—
	Renown.....	77	23	—	—	—	—	—	—	—	—	—	—	—	—	—
	Regent.....	55	22	23	—	—	—	—	—	—	—	—	—	—	—	—
	Rival.....	77	12	11	—	—	—	—	—	—	—	—	—	—	—	—
2D.....	Marquis.....	46	31	23	—	—	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	15	38	39	8	—	—	—	—	—	—	—	—	—	—	—
	Apex.....	46	38	8	8	—	—	—	—	—	—	—	—	—	—	—
	Renown.....	46	31	23	—	—	—	—	—	—	—	—	—	—	—	—
	Regent.....	—	46	31	8	8	—	—	—	—	7	—	—	—	—	—
	Rival.....	38	23	31	8	—	—	—	—	—	—	—	—	—	—	—
3A.....	Marquis.....	4	14	27	18	23	—	—	—	14	—	—	—	—	—	—
	Thatcher.....	4	9	32	18	14	—	—	—	18	—	5	—	—	—	—
	Apex.....	9	23	9	32	14	—	—	—	13	—	—	—	—	—	—
	Renown.....	5	36	18	14	9	—	—	—	18	—	—	—	—	—	—
	Regent.....	—	9	9	14	14	18	—	5	18	4	9	—	—	—	—
	Rival.....	9	14	23	27	9	—	—	—	14	4	4	—	—	—	—
3E.....	Marquis.....	—	25	25	50	—	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	—	12	25	63	—	—	—	—	—	—	—	—	—	—	—
	Apex.....	12	13	25	50	—	—	—	—	—	—	—	—	—	—	—
	Renown.....	12	—	50	25	13	—	—	—	—	—	—	—	—	—	—
	Regent.....	—	12	50	13	25	—	—	—	—	—	—	—	—	—	—
	Rival.....	—	25	12	63	—	—	—	—	—	—	—	—	—	—	—
3C.....	Marquis.....	36	24	20	16	4	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	28	24	28	16	4	—	—	—	—	—	—	—	—	—	—
	Apex.....	40	16	24	16	4	—	—	—	—	—	—	—	—	—	—
	Renown.....	44	20	24	8	4	—	—	—	—	—	—	—	—	—	—
	Regent.....	16	16	32	20	16	—	—	—	—	—	—	—	—	—	—
	Rival.....	32	24	20	12	12	—	—	—	—	—	—	—	—	—	—
3D.....	Marquis.....	40	20	10	20	10	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	30	30	30	—	10	—	—	—	—	—	—	—	—	—	—
	Apex.....	50	20	20	—	10	—	—	—	—	—	—	—	—	—	—
	Renown.....	40	40	—	20	—	—	—	—	—	—	—	—	—	—	—
	Regent.....	20	30	20	20	10	—	—	—	—	—	—	—	—	—	—
	Rival.....	20	40	30	—	10	—	—	—	—	—	—	—	—	—	—
3E.....	Marquis.....	38	25	13	6	9	3	—	—	—	—	—	—	3	—	3
	Thatcher.....	19	31	31	9	3	—	—	—	—	—	—	—	—	3	3
	Apex.....	41	37	13	3	—	—	—	—	—	—	3	—	—	—	3
	Renown.....	47	28	19	—	—	—	—	—	—	—	—	—	3	—	3
	Regent.....	9	31	35	16	3	—	—	—	—	—	—	—	3	—	3
	Rival.....	28	31	32	3	—	—	—	—	—	—	—	—	—	3	3
4A.....	Marquis.....	27	27	9	37	—	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	9	37	27	27	—	—	—	—	—	—	—	—	—	—	—
	Apex.....	37	18	36	9	—	—	—	—	—	—	—	—	—	—	—
	Renown.....	18	36	46	—	—	—	—	—	—	—	—	—	—	—	—
	Regent.....	9	36	18	37	—	—	—	—	—	—	—	—	—	—	—
	Rival.....	9	36	37	18	—	—	—	—	—	—	—	—	—	—	—
4B.....	Marquis.....	33	17	33	17	—	—	—	—	—	—	—	—	—	—	—
	Thatcher.....	33	17	50	—	—	—	—	—	—	—	—	—	—	—	—
	Apex.....	50	17	33	—	—	—	—	—	—	—	—	—	—	—	—
	Renown.....	50	33	17	—	—	—	—	—	—	—	—	—	—	—	—
	Regent.....	33	17	33	17	—	—	—	—	—	—	—	—	—	—	—
	Rival.....	33	17	33	17	—	—	—	—	—	—	—	—	—	—	—

commercial grades. It showed comparatively good grades in zones 1B and 2C. In zone 2D it equalled Renown and was superior to Apex and in zone 3C it equalled Apex. In zone 1B it was superior to Apex and in zone 2C it equalled both Apex and Renown in grading ability. In all other zones, however, it was inferior to Apex and Renown and in zones 3B, 3E, 4A, and 4B it was decidedly inferior to the latter varieties. Lower bushel weight or a super-abundance of green kernels appears to be the reasons for the inferiority. Rival was fourth in grades. It appeared to show most inferiority in zones 3D, 3E, 4A and 4B where lower weights, bleached and green kernels, affected the commercial grades of this variety. Thatcher ranked fifth in commercial grades. Bleached kernels were in evidence in nearly all samples. In zone 4A it showed decidedly poor grades, lower bushel weight being the chief factor for this inferiority. Regent was exceeded by all varieties in commercial grades. Generally its lower bushel weight resulted in grading inferiority in all zones but in zones 4A and 4B it was practically equal to both Thatcher and Rival in grading ability.

TABLE No. 9.—PERCENTAGE OF COMMERCIAL GRADES BY VARIETIES.

Varieties	% 1 Hd.	% 1°	% 2°	% 3°	% 4°	% No. 5	% No. 6	% Feed	% 4 Sp.	% 5 Sp.	% 6 Sp.	% Rej. 1°	% Rej. 2°	% Rej. 3°	% Sam- ple
Marquis.....	32.9	24.3	16.9	14.9	4.7	1.0	.2	—	3.8	.9	—	—	.2	—	.2
Thatcher.....	23.6	24.3	26.7	12.8	4.9	.6	—	.2	4.0	.9	1.6	—	—	.2	.2
Apex.....	38.3	24.6	15.1	12.3	4.3	—	.4	—	2.9	1.6	—	.3	—	—	.2
Renown.....	37.8	27.7	17.1	7.5	4.6	—	.2	—	4.2	.5	—	—	.2	—	.2
Regent.....	14.5	24.9	26.5	14.2	7.2	3.8	.4	1.8	2.2	2.8	1.3	—	.2	—	.2
Rival.....	27.9	25.2	21.9	14.1	4.5	.5	.2	.6	2.6	1.3	.7	—	—	.2	.3

SUMMARIZATION ACCORDING TO CEREAL VARIETY ZONES

Probably the most useful summarization of the data from this series of wheat variety tests is that which shows for each cereal variety zone the data on the different varieties for each important characteristic. In the following tables and discussions the data have been studied on the basis of these Cereal Variety Zones.

In analyzing the yield results calculations were made on the yield data obtained within each zone to determine the necessary difference between varieties required for odds of at least 19:1 that one variety yielded, under the conditions of the tests and irrespective of soil variability, more than another. If the difference between two varieties equals or exceeds the necessary difference the higher yielding variety is considered to be significantly higher yielding than the other.

Readers are reminded that the results of tests during a single year in a zone, no matter how comprehensive they may be, do not constitute satisfactory information upon which to base the choice of a variety to use. The results of several years of tests are needed. Often a less worthy variety suffers less from the weather conditions in a given season than does a superior variety. For example, Reward which has been a notoriously low yielder at certain places over the past twelve years, actually excelled in yield during three successive years of that period. In 1939, due to the unusual distribution of the rainfall, the disadvantage of some of the varieties in the co-operative tests with respect to straw strength, shattering and bushel weight was exaggerated as compared with results averaged for several years. Therefore some reference to previous tests is made in the final comments on the results in each zone.

In this connection the reader is referred to the Cereal Variety Recommendations for 1940, a printed circular available free on request from the Extension Department, University of Saskatchewan, Saskatoon, or the Saskatchewan Department of Agriculture, Regina, or your nearest Dominion Experiment Station or the Saskatchewan Wheat Pool, Regina.

Cereal Variety Zone 1A

Summarized results for Zone 1A appear in Table No. 10. The boundaries of this zone were recently changed. The zone now consists of a relatively large area covering the south centre and the extreme south-western part of the Province. Moisture conditions at the time of seeding were not altogether satisfactory. Generally, however, there was sufficient moisture to ensure germination but reserves were very limited. High winds during the middle of May caused considerable soil-drifting, the damage being most severe in the western part of the zone. Good rains were received during the last week of May throughout practically the entire area, the exception being in the extreme eastern regions where the precipitation was only of a relatively light nature. In the eastern and central part of the zone a heavy grasshopper infestation was at this time causing considerable apprehension. During the second week of June good rains were again received, the moisture falling over practically the entire area and rains of varying amounts continued throughout June. At the end of the month moisture conditions were generally satisfactory and the tests were in good condition, although in the east, early drought, soil-drifting and cutworm damage had resulted in relatively poor prospects. About the middle of July hot winds prevailed and deterioration commenced. The grasshopper population increased. Millions of these pests flew in from Montana, and some of the most promising tests, particularly in the western part of the zone, were completely destroyed. Some deterioration continued throughout July but with the exception of the extreme east where returns were only of a light nature fair to good yields were recorded.

Thatcher with an average of 20.8 bushels per acre excelled in yield in this zone yielding significantly more than the other varieties. It was slightly earlier than Renown and Regent and exceeded Apex, Rival and Marquis in "earliness" by differences of 1.6 days, 1.4 days, and 1.8 days respectively. In height Thatcher was exceeded by Rival by nearly two inches but was only slightly shorter than the other varieties. In straw strength it was slightly inferior to Rival but equalled Marquis and exceeded the other varieties in this characteristic. Thatcher exceeded Regent in bushel weight by a difference of 1 lb. but was outweighed by the other varieties by the following differences: Renown .5 lb.; Rival .7 lb.; Apex 1.2 lbs., and Marquis 1.8 lbs. Many samples contained badly bleached kernels and in a num-

ber of samples shrunken kernels were in evidence. Thatcher ranked fifth in commercial grades, showing superiority only to Regent. Only one test showed stem rust infection to the Thatcher variety, the amount of infection being only of a light nature. No loose or covered smut was recorded. The loss to this variety by shattering was approximately equal to the loss sustained by Regent and somewhat less than the other varieties.

Regent ranked second in yielding ability. It failed to significantly out-yield Apex but yielded more than Rival, Renown and Marquis by differences which exceeded the necessary difference for the zone. It was slightly later than Thatcher but equalled Renown in earliness and was earlier than the other varieties by differences ranging from 1.1 days to 1.5 days. In height Regent slightly exceeded Thatcher, equalled Marquis, was only slightly shorter than Renown and Apex but was 1.7 inches shorter than Rival. In strength of straw it was slightly superior to Renown, equalled Apex in this characteristic but was somewhat inferior to the other varieties. Regent weighing an average of 57.2 lbs. was low in bushel weight being exceeded by the other varieties by differences ranging from 1 lb. to 2.8 lbs. Nearly all samples contained badly shrunken kernels and Regent was exceeded by all varieties in commercial grades. A slight trace of stem rust appeared on this variety in only one test and Regent was free from loose or covered smut infection. Regent and Thatcher were almost equal in the loss sustained by shattering but showed less loss than the other varieties.

Apex was third in yielding ability. The actual difference between this variety and Marquis equalled the necessary difference for the zone but Apex failed to yield significantly more than Renown or Rival. With the exception of Marquis it was later than the other varieties by differences ranging from .2 day to 1.6 days. In height Apex was exceeded by Rival by 1.6 inches. It equalled Renown in this characteristic and was slightly taller than the other varieties. It was slightly superior in straw strength to Renown, tied with Regent in this characteristic but was somewhat inferior to the other varieties. Apex was outweighed by Marquis by .6 lb. per measured bushel but exceeded the other varieties in bushel weight by differences ranging from .5 lb. to 2.2 lbs. Some shrunken or bleached kernels were in evidence in nearly all samples but in commercial grades Apex approximately equalled Marquis and with the exception of Renown exceeded the other varieties. No covered smut was reported but in two tests a small percentage of loose smutted heads were in evidence. A slight trace of rust infection also appeared on the stems of this variety in two tests. Apex showed less loss from shattering than Renown or Rival. It was approximately equal to the other varieties in the loss sustained from this cause.

Rival was fourth in yield in this zone but failed to yield significantly more than Renown or Marquis. It was slightly earlier than Marquis and Apex but approximately 1 day later than the other varieties. It excelled in height, exceeding all other varieties by differences ranging from 1.6 days to 1.9 days. It also excelled in straw strength being slightly superior to Marquis and Thatcher and somewhat superior to the other varieties. In bushel weight Rival was exceeded by Apex and Marquis by .5 lb. and 1.1 lbs. respectively but outweighed the other varieties by differences ranging from .2 lb to 1.7 lbs. Nearly all samples contained some shrunken or bleached kernels but Rival graded reasonably well, being approximately equal to Apex and exceeding both Thatcher and Regent in this regard. Rival appeared to be entirely free from smut and stem rust infection. The loss from shattering was approximately equal to Renown but somewhat more than the loss sustained by the other varieties.

Renown was fifth in yield but the actual difference between this variety and Marquis failed to equal the necessary difference for the zone. In "earliness" it was slightly exceeded by Thatcher and tied with Regent but ripened earlier than the other varieties by differences ranging from 1.1 days to 1.5 days. Renown was exceeded by Rival in height by 1.6 inches, equalled Apex and was slightly taller than the other varieties. In straw strength it was slightly inferior to Apex and Regent and somewhat inferior to the other varieties. Weighing an average of 58.7 lbs. it exceeded Thatcher in bushel weight by .5 lb. and Regent by 1.5 lbs., but was outweighed by the other varieties by differences ranging from .2 lb. to 1.3 lbs. Although nearly all samples contained some shrunken or bleached kernels Renown excelled in commercial grades. A very slight percentage of loose smutted heads appeared in two tests but no covered smut was reported. Only in one test was a slight trace of stem rust in evidence. Renown appeared to be approximately equal to Rival in the loss sustained by shattering, the loss being somewhat more than that suffered by the other varieties.

Marquis was low in yield. In earliness it was exceeded by all varieties by differences ranging from .2 day to 1.8 days. In height Marquis was 1.7 inches shorter than Rival, slightly shorter than Apex or Renown but equalled Regent in height and slightly exceeded Thatcher. Marquis was slightly inferior in straw strength to Rival, tied with Thatcher in this characteristic but was superior to the other varieties. It excelled in bushel weight outweighing Apex, its nearest competitor by .6 lb. Although nearly all samples contained some badly shrunken kernels, Marquis ranked second only to Renown in commercial grades. No loose or covered smut appeared in this variety but in five tests stem rust was in evidence, the percentage of infection ranging from 5% to 25%. The loss by shattering to Marquis was less than the loss sustained by Renown or Rival and approximately equalled the loss reported to the other varieties.

Thatcher led in yield, yielding significantly more than any of the other varieties. While somewhat exceeded in bushel weight and commercial grades by some of the other varieties, its general performance was reasonably satisfactory. Regent was second in yield and yielded significantly more than Rival, Renown and Marquis. Its low bushel weight and decided inferiority in commercial grades, however, cannot be disregarded in making a choice of a variety. Apex ranked third in yield. It failed to yield significantly more than Renown or Rival but the actual difference between this variety and Marquis equalled the necessary difference for the zone. Its height, earliness, bushel weight and grades were generally satisfactory and although somewhat weaker in straw than some of the other varieties the difference was not of a marked nature. Rival, Renown and Marquis were practically equal in yield and the differences between these varieties in other characteristics were not of a marked nature, although on the whole Marquis appears to have made the best showing.

At least a part of this zone is in an area which in the past has suffered severely from stem rust attacks and in this test the percentage of rust infection appearing on the Marquis variety, particularly in the eastern part of the zone, stresses the importance of the use of a rust-resistant variety, at least, in the eastern region. Even in the western part of the zone where rust infection has not been a damaging factor in many tests, the resistant varieties have outyielded the Marquis variety. The performance of Thatcher in this test indicates its worthiness for more or less general use in the zone. The general performance of Apex also appears worthy of consideration. These comments are confirmed by the results of the 1937 and 1938 tests in which both Thatcher and Apex proved themselves satisfactory.

TABLE No. 10.—SUMMARIZED RESULTS FOR ZONE 1A.

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre.....	18.6	20.8	19.2	18.7	19.6	18.9
Days from seeding to ripening.....	108.6	106.8	108.4	107.1	107.1	108.2
Height of Plant in inches.....	33.6	33.4	33.7	33.7	33.6	35.3
Straw strength.....	9.1	9.1	8.8	8.7	8.8	9.2
Bushel weight in pounds.....	60.0	58.2	59.4	58.7	57.2	58.9
Commercial grades						
in percentage.....						
1 Hard	23	14	21	26	4	16
1°	26	21	30	28	21	30
2°	16	19	14	14	21	16
3°	14	12	16	9	12	12
4°	12	11	2	16	12	7
No. 5	2	—	—	—	7	—
No. 6	2	—	2	—	—	—
Feed	—	—	—	—	7	2
4 Spec.	2	21	12	5	7	9
5 Spec.	3	—	3	2	7	5
6 Spec.	—	2	—	—	2	3

Necessary Difference—.6 bushel.

Cereal Variety Zone 1B

Summarized results for Zone 1B are shown in Table No. 11. A change has also recently been made in the boundaries of this Zone. The Zone now consists of a triangular area in the western part of the Province reaching out from the Alberta border. At the commencement of seeding, moisture conditions were generally satisfactory, an exception being in a relatively narrow area immediately adjacent to the Alberta border where rain was needed to ensure proper germination. About the middle of May, rain was urgently needed throughout the area. High winds had rapidly dried out the top-soil and many of the tests had suffered severely from soil-drifting. Good rains were received towards the end of the month and some of the

injury caused by soil-drifting was repaired. Grasshoppers were present in the northern part of the Zone but the heavy rains had checked their activities. Beneficial rains continued during June and at the beginning of July generally the tests were in excellent condition. Lack of moisture and hot winds during July caused some deterioration, particularly in an area close to the Alberta border and an invasion of grasshoppers from south of the International boundary caused some damage in the southern part of the Zone. Generally, however, the tests matured in a satisfactory manner and some good yields were recorded.

Thatcher also excelled in yield in this Zone, yielding significantly more than any of the other varieties. It exceeded all varieties in earliness by differences ranging from .1 day to 1.6 days. Thatcher was the shortest variety in the Zone, being exceeded in height by differences ranging from .4 inch to 2.4 inches. In straw strength it was slightly inferior to Marquis and Renown; it tied with Apex and Rival in this characteristic and was slightly superior to Regent. Thatcher exceeded Regent in bushel weight by a difference of .8 lb. but was outweighed by the other varieties by the following differences: Rival .3 lb., Marquis 1 lb., Apex and Renown, 1.1 lbs. Many samples contained some bleached or shrunken kernels and with the exception of Regent, Thatcher was exceeded by all varieties in commercial grades. Thatcher appeared free from loose or covered smut infection and only in one test was a slight trace of stem rust noticeable on this variety. The loss by shattering was somewhat less than Rival and approximately equal to the other varieties.

Regent ranked second in yield and yielded significantly more than Apex, Renown, Marquis or Rival. It exceeded Marquis, Rival and Apex in "earliness" by differences of .9 day, .4 day, and .2 day respectively, but was approximately .7 day later than Thatcher and Renown. In height Regent was approximately $\frac{3}{4}$ inch taller than Thatcher and nearly $\frac{1}{2}$ inch taller than Renown, but was slightly shorter than Apex, .3 inch shorter than Marquis and 1.6 inches shorter than Rival. It was slightly inferior in straw strength to all varieties. Regent was low in bushel weight, being outweighed by all other varieties by differences ranging from .8 lb. to nearly 2 lbs. Nearly all samples contained some bleached, shrunken or green kernels and these defects combined with light weight resulted in Regent being decidedly low in commercial grades. Regent was entirely free from loose or covered smut infection and only in one test was a slight trace of stem rust infection reported. The loss by shattering was somewhat less than Rival and approximately equal to the other varieties.

Apex was third in yield. The actual difference between this variety and Renown or Marquis failed to equal the necessary difference for the Zone, but Apex yielded significantly more than Rival. In earliness it slightly exceeded Rival and matured .7 day earlier than Marquis but was slightly later than Regent and somewhat later than the other varieties. Apex was slightly exceeded in height by Marquis and was 1.5 inches shorter than Rival, but was slightly taller than Regent and exceeded Renown and Thatcher by .5 inch and .9 inch respectively. In straw strength Apex slightly exceeded Regent, tied with Thatcher and Rival and was slightly inferior to Marquis and Renown. Averaging 61.5 lbs. per measured bushel, Apex tied with Renown in bushel weight and exceeded Marquis by only .1 lb. It outweighed the other varieties, however, by differences ranging from .8 lb. to 1.9 lbs. A number of samples contained some shrunken, bleached, green or light-weight kernels, but Apex graded reasonably well, being exceeded in commercial grades only by Renown and Marquis. Only in one test were a few loose smutted heads in evidence and Apex was free from covered smut infection. A very slight trace of rust appeared on the stems of this variety in two tests. Apex showed somewhat less loss by shattering than Rival and was approximately equal to the other varieties in the loss sustained.

Renown tied with Marquis in yielding ability but failed to yield significantly more than Rival. It ripened approximately the same time as Thatcher and exceeded the other varieties in earliness by differences ranging from .6 day to 1.5 days. In height Renown exceeded Thatcher by .4 inch, but was somewhat shorter than Marquis, Apex and Regent, and 2 inches shorter than Rival. Renown tied with Marquis in superiority of straw strength but the difference between this variety and the other varieties in this characteristic was not of a marked nature. Weighing 61.5 lbs. per bushel, Renown tied with Apex in bushel weight and exceeded the other varieties by differences ranging from .1 lb. to 1.9 lbs. A number of samples contained some shrunken, green or bleached kernels, but despite these defects Renown graded well, being approximately equal to Marquis and exceeding the other

varieties in commercial grades. It was free from loose or covered smut infection and only in one test was a slight trace of stem rust reported. It showed somewhat less loss in shattering to Rival, the loss being practically equal to the other varieties.

Marquis equalled **Renown** in yield, but failed to yield significantly more than **Rival**. It was from .5 day to 1.6 days later than any of the other varieties. **Marquis** was exceeded in height by **Rival** by a difference of 1.3 inches, but was taller than the other varieties by differences which ranged from .2 inch to 1.1 inches. In straw strength it equalled **Renown** and was somewhat superior to the other varieties. Weighing 61.4 lbs. per measured bushel **Marquis** was slightly outweighed by both **Apex** and **Renown**, the difference being only .1 lb. It exceeded the other varieties in weight by the following differences, **Rival** .7 lb., **Thatcher** 1 lb. and **Regent** 1.8 lbs. Many samples contained green, shrunken or bleached kernels, but **Marquis** graded well, being practically equal to **Renown** and superior to the other varieties. No loose or covered smut was reported in this variety but in eight tests stem rust infection was recorded, the amount of infection ranging from 1% to 17%. The loss by shattering to **Marquis** was somewhat less than the loss sustained by **Rival** and about equal to the other varieties.

Rival was the lowest yielding variety in this Zone. With the exception of **Marquis** which was .5 day later, it was exceeded by all varieties in earliness by differences ranging from .2 day to 1.1 days. **Rival** excelled in height being 1.3 inches taller than **Marquis**, its nearest competitor, and exceeded the other varieties by differences of from 1.5 inches to 2.4 inches. In straw strength it was exceeded by **Marquis** and **Renown**, equalled **Thatcher** and **Apex** and was slightly superior to **Regent**. **Rival** was outweighed by **Renown** and **Apex** by .8 lb. and was also exceeded in bushel weight by **Marquis** by a difference of .7 lb. It outweighed **Thatcher** and **Regent**, however, by differences of .3 lb. and 1.1 lbs. respectively. Some shrunken, bleached or green kernels were in evidence in a number of samples and **Rival** ranked fourth in commercial grades. No loose or covered smut was reported in this variety, but in three tests a very slight trace of stem rust infection was in evidence. The percentage of loss by shattering was somewhat more than the loss sustained by any of the other varieties.

TABLE No. 11—SUMMARIZED RESULTS FOR ZONE 1B

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	25.4	28.9	26.0	25.4	27.2	24.9
Days from seeding to ripening.....	103.8	102.2	103.1	102.3	102.9	103.3
Height of plant in inches..	34.2	33.1	34.0	33.5	33.9	35.5
Straw strength.....	9.2	9.1	9.1	9.2	9.0	9.1
Bushel weight in pounds...	61.4	60.4	61.5	61.5	59.6	60.7
Commercial grades in percentage.....						
1 Hard	46	35	46	57	22	43
1°	24	24	19	8	32	24
2°	11	14	11	11	16	11
3°	8	5	11	11	6	8
4°	3	8	8	3	5	3
No. 5	5	3	—	—	8	3
No. 6	—	—	3	3	—	3
Feed	—	3	—	—	5	—
4 Spec.	—	5	2	5	3	3
5 Spec.	3	3	—	2	3	2
6 Spec.	—	—	—	—	—	—

Necessary difference—.8 bushel.

Thatcher again excelled in yield, yielding significantly more than the other varieties. In weight, grades and other characteristics it was reasonably satisfactory. **Regent** yielded significantly more than **Apex**, **Renown**, **Marquis** or **Rival**. It was, however, somewhat weak in straw, and decidedly inferior to the other varieties in bushel weight and commercial grades. **Apex** outyielded only **Rival** by a difference which exceeded the necessary difference for the Zone. Its straw strength was satisfactory. It tied with **Renown** in bushel weight and ranked third to **Renown** and **Marquis** in commercial grades. **Renown** and **Marquis** tied in yield and straw strength and were practically equal in bushel weight and commercial grades. **Rival** was low in yield, but weighed and graded fairly well. It showed somewhat more loss by shattering than the other varieties but the difference was not of a marked nature.

Stem rust infection has not, in the past, caused severe losses in this area and the extensive use of a rust-resistant variety is not so important

as in many other parts of the Province. Nevertheless the results of this test would indicate that at least some of the new rust-resistant varieties have qualities other than their resistance to stem rust attacks, which would indicate their usefulness. The yield performance of Thatcher in this test, despite its inferiority to some of the other varieties in bushel weight and commercial grades, is deserving of some consideration when the choice of a variety is being made, but Apex, Renown and Marquis also show considerable merit in a number of characteristics. Consideration of these results along with those of 1937 and 1938 places Thatcher, Apex and Renown as being superior to Marquis.

Cereal Variety Zone 2A

The results for Zone 2A appear in Table No. 12. This zone consists of an area running diagonally from the southeast corner of the Province to a point some 12 miles north of Regina. While at the time of seeding there was sufficient moisture to ensure germination, generally throughout the zone there were no reserves and good rains were required to maintain normal growth. The most serious situation existed in the southern part of the zone where high winds had caused considerable soil-drifting and early in the season grasshoppers were present in large numbers. At the beginning of June many of the tests in this southern region had been severely damaged by drought, wind, cutworms, wireworms and grasshoppers. Rains which fell during the middle and latter part of June and continued in the first week of July somewhat alleviated the situation but hot winds during July took a heavy toll. Hail storms were also a factor in the southern part of this zone. In the south many of the tests were totally destroyed by adverse conditions and in the central and northern parts of the zone, while conditions were somewhat more favourable, lack of adequate moisture supplies together with grasshopper damage caused considerable injury. Yields ranged from poor to fair. The unfavourable conditions which existed in this area are reflected by the fact that only 47% of the tests reached maturity and were harvested.

Rival exceeded all other varieties in yield but the actual difference between this variety and either Thatcher or Regent did not equal the necessary difference for the zone. Rival, however, yielded significantly more than Apex, Renown and Marquis. In "earliness" it was exceeded by Thatcher by .8 day and was slightly exceeded by both Renown and Regent. It was, however, earlier than Marquis, and Apex by differences of 1 day and .5 day respectively. Rival excelled in height being taller than the other varieties by differences ranging from 1.2 inches to 3 inches. In straw strength it was slightly superior to Apex but was inferior in this characteristic to all other varieties. Rival was outweighed by Apex and Marquis by .8 lb., and by Renown by 1.6 lbs. but exceeded the other varieties in bushel weight by the following differences: Thatcher .1 lb., and Regent 1.2 lbs. Many samples contained bleached or shrunken kernels and Rival ranked fifth in commercial grades. It was free from covered or loose smut infection but in one test a slight trace of rust was in evidence on the stems of this variety. The loss in shattering sustained by Rival was decidedly more than the loss to the other varieties.

Thatcher was second in yielding ability. The actual difference between this variety and Regent failed to equal the necessary difference for the zone but the difference between Thatcher and Apex equalled the necessary difference and Thatcher yielded significantly more than Renown or Marquis. It excelled in "earliness" maturing earlier than the other varieties by differences ranging from .4 day to 1.8 days. In height Thatcher was exceeded by all varieties by differences of from .4 inch to 3 inches. It excelled in straw strength, being decidedly superior in this characteristic to Apex and somewhat superior to the other varieties. Thatcher outweighed Regent by 1.1 lbs., but was exceeded in weight by Rival by .1 lb., Marquis and Apex by .9 lb. and Renown by 1.7 lbs. Nearly all samples contained some bleached and shrunken kernels and these defects, together with light weight, resulted in Thatcher grading relatively low, showing some superiority only to Rival and Regent in commercial grades. No covered or loose smut was reported in Thatcher but in one test a very light trace of rust appeared on the stems of this variety. A small loss by shattering was recorded. This equalled the loss sustained by Marquis and Renown, was slightly more than the shattering of Apex or Regent but decidedly less than Rival.

Regent was third in yield. It failed to outyield Apex by a difference which equalled the necessary difference for the zone but Regent yielded significantly more than Renown or Marquis. With the exception of Thatcher, which was .4 day earlier, it exceeded all varieties in "earliness" by differ-

ences ranging from .3 day to 1.4 days. Regent was 1.2 inches shorter than Rival but was from .2 inch to nearly 2 inches taller than the other varieties. It was somewhat inferior in straw strength to Thatcher and slightly inferior to Renown, tied with Marquis in this characteristic but was slightly superior to Rival and showed a marked superiority to Apex. Regent was low in bushel weight being exceeded by all varieties by the following differences: Thatcher 1.1 lbs., Rival 1.2 lbs., Marquis and Apex 2 lbs., and Renown 2.8 lbs. Nearly all samples contained bleached, shrunken or green kernels and Regent was exceeded by all varieties in commercial grades. One test showed a slight trace of loose smutted heads and a very light infection of stem rust also appeared in one test. No covered smut was reported. The small loss by shattering to the Regent variety equalled the loss sustained by Apex, was slightly less than Marquis, Thatcher and Renown and decidedly less than the loss to Rival.

Apex ranked fourth in yielding ability. The actual difference between this variety and Renown failed to equal the necessary difference for the zone, but the difference between Apex and Marquis equalled the necessary difference. Apex also yielded significantly more than Marquis. In "earliness" it exceeded Marquis by a difference of .5 day but was later than the other varieties by differences ranging from .5 day to 1.3 days. Apex was exceeded in height by Rival by a difference of 1.7 inches and was somewhat exceeded in height by Marquis and Regent. It was, however, nearly 1 inch taller than Renown and 1.3 inches taller than Thatcher. Apex was decidedly inferior in straw strength to Thatcher and somewhat inferior to the other varieties. Weighing 59.4 lbs. per measured bushel it equalled Marquis but was exceeded by Renown by a difference of .8 lb. It outweighed the other varieties, however, by the following differences: Rival .8 lb., Thatcher .9 lb., and Regent 2 lbs. Bleached or shrunken kernels were in evidence in a number of samples but despite these defects Apex was only slightly inferior to Renown and exceeded the other varieties in commercial grades. No stem rust, covered or loose smut infection appeared in this variety and Apex tied with Renown in showing the smallest loss from shattering.

Renown was fifth in yield but failed to yield significantly more than Marquis. It ripened 1.1 days earlier than Marquis, .6 day earlier than Apex, practically tied in "earliness" with Rival, was .7 day later than Thatcher and slightly later than Regent. Renown was nearly .5 inch taller than Thatcher but was exceeded in height by the other varieties, the differences ranging from .9 inch to 2.6 inches. In straw strength it was exceeded only by Thatcher. It was decidedly superior in this characteristic to Apex and slightly superior to the other varieties. Renown excelled in bushel weight, outweighing the other varieties by the following differences: Marquis and Apex .8 lb., Rival 1.6 lbs., Thatcher 1.7 lbs., and Regent 2.8 lbs. A number of samples contained badly shrunken kernels but despite this defect Renown excelled in commercial grades. No loose or covered smut was in evidence in this variety and Renown was also completely free from stem rust infection. The slight loss in shattering sustained by this variety equalled that of Marquis and Thatcher, was slightly more than Apex and Regent but decidedly less than Rival.

Marquis was low in yield. It was exceeded in "earliness" by all varieties by differences ranging from .5 day to 1.8 days. Marquis was slightly shorter than Regent and 1.4 inches shorter than Rival but exceeded the other varieties in height by differences ranging from .3 inch to 1.6 inches. In straw strength Marquis was slightly inferior to Renown and somewhat inferior to Thatcher. It equalled Regent in this characteristic, was slightly superior to Rival and decidedly superior to Apex. Weighing 59.4 lbs. per measured bushel it was outweighed by Renown by .8 lb., equalled Apex in bushel weight and exceeded the other varieties by the following differences: Rival .8 lb., Thatcher .9 lb., and Regent 2 lbs. All samples contained badly shrunken, bleached or green kernels and although it weighed relatively well it was exceeded by both Apex and Renown in commercial grades. Marquis was free from loose and covered smut but a number of tests showed an infection of stem rust. The average percentage of infection was recorded as 2% which was considerably more than the infection appearing on the stems of any of the other varieties. Marquis sustained a small loss by shattering. It equalled the loss of Thatcher and Renown, was slightly more than Apex or Regent but considerably less than Rival.

Many tests in this zone suffered severely from drought conditions. The area has, in the past, been subject to heavy stem rust infection. Even in 1939 some infection was in evidence and the continued use of a variety with resistant qualities is of paramount importance.

Rival excelled in yield. It was somewhat exceeded by some of the other varieties in bushel weight and commercial grades but in its other characteristics it was reasonably satisfactory, although its tendency to shatter easily was a handicap. Little difference appeared in the yields of Thatcher, Regent and Apex but apart from a decided weakness in straw Apex appeared to have the most desirable qualities. Renown showed poor yields but excelled in bushel weight. It showed good straw strength and graded well. Marquis was low in yield and although it showed good bushel weight and graded relatively well it displayed no other outstanding qualities. The percentage of rust infection appearing on the stems of this variety is a distinct danger signal against its use in this area.

Generally it would appear that the performance of Rival is deserving of consideration, but the results in connection with this variety cover one year only and before any definite decision can be made, further information is necessary. Despite inferiority in straw strength, however, the number of other superior characteristics displayed by Apex in this test and its performance during the tests of 1937 and 1938 also indicates its worthiness for use in this zone.

TABLE No. 12—SUMMARIZED RESULTS FOR ZONE 2A.

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	13.7	15.7	14.7	13.9	15.2	16.1
Days from seeding to ripening.....	102.6	100.8	102.1	101.5	101.2	101.6
Height of plant in inches....	31.5	29.9	31.2	30.3	31.7	32.9
Straw strength.....	9.1	9.4	8.8	9.2	9.1	9.0
Bushel weight in pounds....	59.4	58.5	59.4	60.2	57.4	58.6
Commercial grades in percentage.....						
1 Hard	25	12	31	25	6	19
1°	19	31	25	44	19	19
2°	25	19	—	—	31	19
3°	—	6	12	—	13	12
4°	—	13	13	12	—	13
No. 5	—	—	—	—	13	—
No. 6	—	—	—	—	—	—
Feed	—	—	—	—	6	6
4 Spl.	25	—	6	19	—	—
5 Spl.	6	6	13	—	6	6
6 Spl.	—	13	—	—	6	6

Necessary difference—1.0 bushel.

Cereal Variety Zone 2B

The results for Zone 2B are shown in Table No. 13. This zone consists of a region in the centre of Saskatchewan's grain growing area. High winds which prevailed over this area early in May rapidly dried out the top soil and later in the month caused considerable soil-drifting. In the southern and central parts of the zone, good rains fell during the latter part of May and some recoveries were made. In the northern portion, however, only light showers were received at this time and a good general rain was needed. During June heavy rains which fell over the entire Zone considerably improved the situation. Grasshoppers which were present in large numbers were a serious threat but little damage had actually occurred to the tests. Hot winds during the month of July caused some deterioration particularly in the extreme southern portion of the zone where yields were considerably reduced. Generally throughout this zone, however, the tests matured in a satisfactory manner. Some grasshopper and sawfly damage was recorded but on the whole the extent of the injury was only of a light nature.

Thatcher excelled in yield, and yielded significantly more than any of the other varieties. Although slightly later than Renown, it matured from .3 day to 1.9 days earlier than the other varieties. Thatcher was exceeded in height by all varieties by differences of from .3 inch to 2.3 inches. In straw strength it tied with Marquis and Renown and was superior in this characteristic to all other varieties. Thatcher outweighed Regent by .9 lb. but was exceeded in weight by the other varieties by the following differences: Rival .6 lb.; Apex .8 lb.; Marquis 1.2 lbs.; and Renown 1.3 lbs. Nearly all samples contained bleached and shrunken kernels and Thatcher ranked fifth in commercial grades. No loose or covered smut appeared in this variety and only in one test was a slight trace of stem rust in evidence. The loss by shattering was slightly more than the loss sustained by Renown, equalled Regent, but was slightly less than Apex, Rival or Marquis.

Rival ranked second in yielding ability. The actual differences between this variety and Regent, Renown or Marquis failed to equal the necessary difference for the zone but Rival yielded significantly more than Apex in this zone. In earliness Rival practically tied with Apex and was 1.1 days earlier than Marquis. It was, however, later than the other varieties by differences ranging from .5 day to 1.1 days. Rival excelled in height, being from 1.5 to 2.3 inches taller than the other varieties. In straw strength it was slightly superior to Regent and somewhat superior to Apex but showed inferiority to the other varieties. Rival outweighed Thatcher and Regent by .6 lb. and 1.5 lbs. respectively but was exceeded in bushel weight by the other varieties by the following differences: Apex .2 lb.; Marquis .6 lb. and Renown .7 lb. Many samples contained shrunken and some bleached kernels. Rival and Marquis were approximately equal in commercial grades, being exceeded in grade only by Apex and Renown. No covered smut was reported and only in one test were a few loose smutted heads in evidence. A slight trace of stem rust infection was also reported in one test but generally Rival was entirely free from rust infection. The loss by shattering was slightly less than the loss to Marquis and only slightly more than the losses sustained by the other varieties.

Regent was third in yield but failed to outyield either Renown or Marquis by a difference which equalled the necessary difference for the zone but yielded significantly more than Apex. In earliness it was slightly exceeded by both Thatcher and Renown but matured approximately .5 day earlier than Apex or Rival and 1.6 days earlier than Marquis. Regent was slightly exceeded in height by both Marquis and Apex and was 1.7 inches shorter than Rival. It was, however, .6 inch taller than Thatcher and slightly taller than Renown. In straw strength it was somewhat superior to Apex but slightly inferior to Rival and decidedly inferior to the other varieties. Regent was low in bushel weight, being outweighed by all varieties by the following differences: Thatcher .9 lb.; Rival 1.5 lbs.; Apex 1.7 lbs.; Marquis 2.1 lbs. and Renown 2.2 lbs. Nearly all samples contained bleached, shrunken or some green kernels and Regent was decidedly lower in commercial grades than the other varieties. One test showed a very small percentage of loose smutted heads but this variety was almost free from stem rust and entirely free from covered smut infection. The small loss by shattering sustained by this variety equalled Thatcher but was slightly more than Renown and slightly less than Marquis, Apex or Rival.

Renown ranked fourth in yield but the actual difference between this variety and either Marquis or Apex failed to equal the necessary difference for the zone. It excelled in earliness, maturing earlier than the other varieties by differences ranging from .3 day to 2.2 days. With the exception of Thatcher which was .3 inch shorter, it was exceeded in height by all varieties by differences of from .3 inch to 2 inches. Renown equalled both Marquis and Thatcher in straw strength and was superior in this characteristic to the other varieties. It excelled in bushel weight, outweighing the other varieties by differences ranging from .1 lb. to 2.2 lbs. Nearly all samples contained shrunken or green kernels but despite these defects which in some tests lowered grades considerably, Renown excelled in commercial grades. A very small percentage of loose smutted heads was reported in only one test but no covered smut was recorded. One test also showed a slight trace of stem rust. Renown sustained less loss by shattering than any of the other varieties.

Marquis was fifth in yielding ability but failed to yield significantly more than Apex. It ripened later than any of the other varieties by differences ranging from 1 day to 2.2 days. It equalled Apex in height and with the exception of Rival which was 1.5 inches taller, Marquis exceeded all other varieties by differences ranging from .2 inch to .8 inch. It equalled Renown and Thatcher in straw strength and was superior in this characteristic to all other varieties. Weighing 61.7 lbs. per bushel it was exceeded in bushel weight by Renown by only .1 lb. and outweighed the other varieties by differences ranging from .4 lb. to 2.1 lbs. Practically all samples showed shrunken or some green kernels but Marquis graded relatively well, equalling Rival, and exceeded in commercial grades only by Apex and Renown. No loose or covered smut was reported in this variety but many tests showed stem rust infection, the percentage of infection ranging from 2—15%. Marquis also appeared to have sustained slightly more loss by shattering than any of the other varieties.

Apex was low in yield in this zone. It was 1 day earlier than Marquis, was practically equal in earliness to Rival but was later than the other varieties by differences ranging from .6 day to 1.2 days. In height Apex

tioned with Marquis and was 1.5 inches shorter than Rival. It exceeded the other varieties by .2 inch to .8 inch. Apex was definitely inferior in straw to all varieties, being particularly inferior to Marquis, Thatcher and Renown. Averaging 61.3 lbs. per measured bushel, it was outweighed by Marquis and Renown by .4 lb. and .5 lb. respectively but exceeded the other varieties in bushel weight by the following differences: Rival .2 lb.; Thatcher .8 lb.; and Regent 1.7 lbs. Nearly all samples contained shrunken and some bleached or green kernels but Apex ranked fourth in commercial grades, showing superiority in grades to both Thatcher and Regent. Loose smutted heads were in evidence in two tests but a very slight trace of rust infection appeared in only one test. The loss by shattering equalled the loss of Rival, was slightly more than Thatcher, Regent or Renown, but somewhat less than Marquis.

The yield of Thatcher was outstanding and in nearly all other characteristics it was reasonably satisfactory. Although it was outweighed and was somewhat inferior in grades to nearly all varieties, these factors failed to overcome the advantage it held in yield. Little differences appeared in the yields, bushel weight or commercial grades of Rival, Renown or Marquis. Marquis showed no particular advantage over the other two varieties and its susceptibility to stem rust is a distinct handicap in this zone. Generally Renown exhibited more satisfactory characteristics than Rival, particularly in bushel weight and commercial grades. Regent yielded fairly well but was low in bushel weight and commercial grades. Apex, while low in yield, was reasonably satisfactory in bushel weight and commercial grades. It showed no other outstanding merits, however, and was somewhat weak in straw.

The performance of Thatcher indicates its worthiness for use in this zone. This is confirmed by the results of the last four years, Thatcher having consistently outyielded all varieties and showed reasonable satisfaction in its other characteristics. In this test Renown also appears to have some characteristics which are deserving of consideration. Considering the results for the past three years Marquis is inferior, Thatcher distinctly the best and Apex is tied with Renown.

TABLE No. 13—SUMMARIZED RESULTS FOR ZONE 2B

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	22.8	27.1	22.4	23.1	23.4	23.5
Days from seeding to ripening.....	104.6	102.7	103.6	102.4	103.0	103.5
Height of plant in inches....	34.2	33.4	34.2	33.7	34.0	35.7
Straw strength.....	9.3	9.3	8.6	9.3	8.9	9.1
Bushel weight in pounds....	61.7	60.5	61.3	61.8	59.6	61.1
Commercial grades in percentage.....						
1 Hard	33	31	38	44	15	38
1°	41	31	41	33	33	33
2°	8	21	3	—	26	10
3°	8	2	3	10	8	3
4°	—	—	5	3	—	5
No. 5	2	5	—	—	3	3
No. 6	—	—	—	—	5	—
4 Spl.	8	8	5	8	—	8
5 Spl.	—	2	5	2	10	—
6 Spl.	—	—	—	—	—	—

Necessary difference—.8 bushel.

Cereal Variety Zone 2C

Summarized results for Zone 2C are presented in Table No. 14. This zone represents a small narrow area in the southwestern part of the province reaching out from the Alberta border to a point south and east of Swift Current. At the time of seeding moisture conditions were generally satisfactory but high winds which prevailed during May caused considerable soil-drifting. Some cutworm damage was also reported. At the end of May heavy rains were received. Further moisture was received during June and although cool weather had somewhat retarded growth the condition of the tests had greatly improved. At the beginning of July higher temperatures prevailed. During the middle of the month hot winds had resulted in some declines but most concern was caused by an invasion of grasshoppers. While these pests injured a number of the tests the damage did not appear to be as serious as at first expected and fair to good yields were recorded.

Marquis exceeded all varieties in yield. It yielded significantly more than Renown but failed to outyield any of the other varieties by differences which equalled the necessary difference for the zone. With the exception of Rival which required 1.7 days longer to reach maturity it was exceeded

in "earliness" by all varieties by differences ranging from .6 day to 3.5 days. In height Marquis was exceeded by both Apex and Renown by a difference of .4 inch. It was also slightly shorter than Rival but was approximately .5 inch taller than Thatcher and Regent. It was inferior in straw strength to Rival, tied with Thatcher in this characteristic but was somewhat superior to Renown and Regent and showed marked superiority to Apex. With the exception of Renown, which weighed slightly more, Marquis exceeded all varieties in bushel weight by differences ranging from .5 lb. to 1.4 lbs. Only in one sample were any shrunken kernels in evidence and Marquis tied with Apex and Renown and exceeded the other varieties in commercial grades. No covered or loose smut was reported but in one test Marquis showed 10% stem rust infection. The loss by shattering was somewhat more than Apex, decidedly less than Rival and slightly less than the loss sustained by the other varieties.

Thatcher was second in yielding ability. The difference between this variety and Renown equalled the necessary difference for the zone but Thatcher failed to yield significantly more than Apex, Rival or Regent. It excelled in "earliness" exceeding the other varieties by differences ranging from 1 day to 5.2 days. In height Thatcher was exceeded by all varieties by differences ranging from .1 inch to 1 inch. It was somewhat inferior in straw strength to Rival, tied with Marquis, was decidedly superior to Apex and slightly superior in this characteristic to the other varieties. With the exception of Rival and Regent, which weighed somewhat less, Thatcher was outweighed by the other varieties by the following differences: Apex .4 lb., Marquis .9 lb., and Renown 1.1 lbs. Only two samples contained bleached kernels and Thatcher tied with Rival in commercial grades, being inferior to Marquis, Apex and Renown but showing superiority to Regent. No loose smut, covered smut, or stem rust infection was reported. Thatcher showed somewhat more loss from shattering than Apex but decidedly less than Rival. It appeared to have sustained approximately the same loss as the other varieties.

Apex ranked third in yield but failed to yield significantly more than Regent, Rival or Renown. It was 1 day later than Thatcher but exceeded the other varieties in "earliness" by differences ranging from .4 day to 4.2 days. In height Apex equalled Renown and was from .2 inch to 1 inch taller than the other varieties. It was inferior to all varieties in strength of straw. In bushel weight Apex was exceeded by Marquis and Renown by differences of .5 lb., and .7 lb. respectively but outweighed Thatcher, Rival and Regent by differences of .4 lb., .6 lb. and .9 lb. respectively. One sample contained some bleached kernels and in one sample lightweight kernels were in evidence but Apex tied with Marquis and Renown in commercial grades. No covered or loose smut was reported but in one test a slight trace of stem rust was recorded. Apex appeared to have sustained less loss by shattering than any of the varieties, the loss being decidedly less than Rival and somewhat less than the other varieties.

Regent was fourth in yielding ability but failed to outyield Rival or Renown by a difference which equalled the necessary difference for the zone. It exceeded Marquis in earliness by .6 day and ripened 2.3 days earlier than Rival. It was, however, later than the other varieties by the following differences: Renown 1.5 days, Apex 1.9 days, and Thatcher 2.9 days. Regent was only slightly taller than Thatcher and was exceeded in height by all other varieties by differences ranging from .5 inch to nearly 1 inch. In straw strength Regent was somewhat superior to Apex and tied with Renown but was inferior to the other varieties. Regent was low in bushel weight being outweighed by all varieties by differences ranging from .3 lb., to 1.6 lbs. Bleached, green or shrunken kernels were in evidence in some tests, and these defects, together with relatively light weight resulted in Regent being low in commercial grades. No covered or loose smut was reported in Regent but in one test a slight trace of rust appeared on the stems of this variety. The loss by shattering was somewhat more than the loss sustained by Apex, but decidedly less than Rival and approximately equal to the other varieties.

Rival ranked fifth in yielding ability but failed to significantly outyield Renown. Requiring 115 days to reach maturity it was exceeded in "earliness" by all varieties by differences ranging from 1.7 days to 5.2 days. In height Rival was slightly exceeded by Apex and Renown but was slightly taller than the other varieties. It excelled in straw strength, showing a marked superiority to Apex in this characteristic. With the exception of Regent, which weighed .3 lb. less, Rival was exceeded in bushel weight by all varieties by differences ranging from .2 lb. to 1.3 lbs. Bleached and

some green kernels appeared in a few samples. In commercial grades Rival tied with Thatcher and exceeded Regent but was somewhat inferior to the other varieties. No loose or covered smut was reported but in one test a slight trace of stem rust was in evidence. The loss by shattering sustained by Rival was decidedly more than the loss to the other varieties.

Renown was low in yield in this zone. It was later than either Apex or Thatcher by differences of .4 day and 1.4 days respectively but exceeded the other varieties in "earliness" by from 1.5 days to 3.8 days. In height Renown tied with Apex and was from .2 inch to 1 inch taller than the other varieties. It equalled Regent in straw strength, was somewhat superior to Apex but was inferior to the other varieties in this characteristic. Renown excelled in bushel weight, exceeding all varieties by differences ranging from .2 lb., to 1.6 lbs. One sample contained some bleached kernels, and in one sample some green kernels were noticeable, but in commercial grades Renown equalled Marquis and Apex and was superior to the other varieties. A very small percentage of loose smutted heads appeared in one test but no covered smut was reported. In one test a light trace of stem rust was in evidence. The loss by shattering was somewhat more than the loss sustained by Apex but decidedly less than the loss to Rival and approximately equal to the loss to the other varieties.

Marquis led in yield but outyielded only Renown by a difference which equalled the necessary difference for the zone. Although somewhat later than some of the other varieties it was generally satisfactory in other characteristics. Thatcher was second in yielding ability but only in the case of Renown was the actual difference between Thatcher and the other varieties equal to the necessary difference for the zone. It was earlier than the other varieties, was reasonably satisfactory in height and straw strength but was somewhat inferior to Marquis, Apex and Renown in bushel weight and commercial grades. Apex ranked third in yield but failed to significantly outyield Renown, Regent or Rival. It was decidedly weak in straw but was comparatively early, showed good bushel weight and commercial grades. Regent was fourth in yield but failed to yield significantly more than Renown or Rival. It was low in bushel weight and commercial grades. Rival ranked fifth in yield but also failed to yield significantly more than Renown. It was decidedly later than all varieties, was somewhat light in weight and was exceeded in commercial grades by Marquis, Apex and Renown. Renown was low in yield but excelled in bushel weight and tied with Marquis and Apex in showing the best commercial grades.

While in one test Marquis was infected by stem rust, in the past this area has not suffered severely from a rust epidemic. The performance of Marquis in this testing project indicates that it still has considerable merit for use in this zone. Of the rust resistant varieties, Thatcher and Apex appear to have made the best showing. The superiority of Apex in weight, and commercial grades is, however, to some extent offset by its inferior straw strength, and the results of this test together with the tests conducted in 1937 and 1938 would suggest that of these two latter varieties Thatcher is preferable.

TABLE No. 14—SUMMARIZED RESULTS FOR ZONE 2C

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	25.6	25.1	25.0	23.1	24.7	24.0
Height of plant in inches....	33.7	33.1	34.1	34.1	33.2	33.9
Days from seeding to ripening.....	113.3	109.8	110.8	111.2	112.7	115.0
Straw strength.....	9.1	9.1	8.2	8.9	8.9	9.5
Bushel weight in pounds....	63.8	62.9	63.3	64.0	62.4	62.7
Commercial grades in percentage.....	1 Hd.					
	77	77	77	77	55	77
1°	23	11	23	23	22	12
2°	—	12	—	—	23	11

Necessary difference—2.0 bushels.

Cereal Variety Zone 2D

The results for Zone 2D are shown in Table No. 15. This zone consists of a relatively small area in the north western part of the Province adjacent to the Alberta border. While at the time of seeding subsoil moisture conditions were satisfactory in some areas, the top soil was in a somewhat dry condition. Soil drifting caused some damage but good rains which commenced early in June and continued at intervals during the month con-

siderably improved the condition of the tests. Grasshoppers were present throughout most of the area and although heavy damage occurred to one or two tests, generally taking the zone as a whole the injury was only of a relatively light nature. Hot winds prevailed during most of July and August. Some deterioration occurred but generally the different varieties developed in a reasonably satisfactory manner and fair yields were recorded. Sawflies appeared to be the most troublesome pests causing some damage to all varieties in a number of tests.

Thatcher excelled in yield, yielding significantly more than all varieties. It tied with **Renown** in earliness but was slightly earlier than **Regent** and exceeded the other varieties in earliness by differences ranging from 1 day to 2.1 days. **Thatcher** was the shortest variety, being exceeded in height by differences from .2 inch to 1.2 inches. It excelled in straw strength. Weighing 60.6 pounds per measured bushel it outweighed **Regent** by .8 lb. but was exceeded in bushel weight by all other varieties by differences ranging from 1 lb. to 1.7 lbs. Bleached, green and shrunken kernels were in evidence in most samples and these defects together with somewhat light weight resulted in **Thatcher** being comparatively low in commercial grades. No loose or covered smut was reported and **Thatcher** was also free from stem rust infection. Some loss by shattering occurred, the percentage of loss being slightly more than **Marquis**, **Apex** or **Regent**, but slightly less than **Renown** or **Rival**.

Rival ranked second in yielding ability in this zone and with the exception of **Thatcher** outyielded all varieties by differences which exceeded the necessary difference for the zone. It was approximately equal in earliness to **Marquis** but was later than the other varieties by differences of from 1 day to 2 days. **Rival** excelled in height, being from .3 inch to 1.2 inches taller than the other varieties. In straw strength it was slightly inferior to **Thatcher**, equalled **Renown**, but was slightly superior to the other varieties. **Rival** outweighed **Regent** and **Thatcher** by 1.8 lbs. and 1 lb. respectively, but was exceeded in bushel weight by the other varieties by differences of from .2 lb. to .7 lb. A number of samples contained green, bleached or shrunken kernels and **Rival** ranked fourth in commercial grades, being superior to both **Thatcher** and **Regent**. **Rival** was free from stem rust or smut infection but the loss sustained by shattering exceeded the loss of the other varieties.

Apex was third in yield but failed to outyield either **Regent** or **Renown** by differences which equalled the necessary difference for the zone. It was 1 day later than **Thatcher** and **Renown** but ripened from .2 day to 1.1 days earlier than the other varieties. **Apex** was slightly exceeded in height by **Rival** but was from .2 inch to nearly 1 inch taller than the other varieties. In straw strength it was slightly superior to **Regent** and **Marquis** but was slightly inferior to the other varieties. **Apex** was outweighed by **Marquis** and **Renown** by .3 lb. and .5 lb. respectively but exceeded the other varieties in weight by the following differences: **Rival** .2 lb.; **Thatcher** 1.2 lbs.; and **Regent** 2 lbs. Despite some shrunken bleached and light weight kernels **Apex** excelled in commercial grades. In one test a few loose smutted heads were in evidence but **Apex** was free from covered smut and stem rust infection. The loss by shattering was estimated at 1 per cent. which equalled the loss sustained by **Marquis** but was less than the loss of the other varieties.

Regent ranked fourth in yielding ability, but the difference between the yield of this variety and **Renown** or **Marquis** did not equal the necessary difference for the zone. It was .2 day later in reaching maturity than either **Thatcher** or **Renown** but was from .8 day to 1.9 days earlier than the other varieties. **Regent** was slightly taller than **Thatcher** but was exceeded in height by the other varieties by differences ranging from .1 inch to 1 inch. In straw strength **Regent** tied with **Marquis** but was inferior to the other varieties. It was low in bushel weight, being outweighed by all varieties by differences ranging from .8 lb. to 2.5 lbs. Green, shrunken or bleached kernels were in evidence in all samples and these defects combined with low weight resulted in **Regent** being exceeded by all varieties in commercial grades. **Regent** was free from covered smut or stem rust infection and only in one test was a very slight percentage of loose smutted heads in evidence. The loss by shattering was slightly more than the loss sustained by **Marquis** and **Apex**, approximately equal to the loss to **Thatcher** and somewhat less than **Renown** or **Rival**.

Renown was fifth in yield in the zone but failed to yield significantly more than **Marquis**. In "earliness" it equalled **Thatcher** and exceeded the other varieties by differences ranging from .2 day to 2.1 days. **Renown**

and Regent were practically equal in height and Renown was only slightly taller than Thatcher. It was, however, from .4 inch to .9 inch shorter than Marquis, Apex, and Rival. Renown tied with Rival in strength of straw, was slightly inferior to Thatcher, but slightly superior in this characteristic to the other varieties. It excelled in bushel weight, outweighing all varieties by differences ranging from .2 lb. to 2.5 lbs. Some shrunken and green kernels were in evidence in many samples, but Renown, although slightly inferior to Apex and equalling Marquis, graded better than the other varieties. Renown was free from stem rust and covered smut infection but in one test loose smutted heads were in evidence. The number of diseased heads was slightly less than the number appearing in the Marquis and Apex varieties but exceeded the infection in the Regent variety. The loss by shattering was slightly less than the loss to Rival but more than the other varieties.

Marquis was low in yield. It was the latest maturing variety, being exceeded in "earliness" by the other varieties by differences ranging from .1 day to 2.1 days. Marquis was exceeded in height by Apex and Rival by differences of .2 inch and .5 inch respectively but was from .4 inch to .7 inch taller than the other varieties. In straw strength it equalled Regent but was slightly inferior to the other varieties. Marquis was slightly outweighed by Renown but exceeded the other varieties in bushel weight by the following differences: Apex .3 lb.; Rival .5 lb.; Thatcher 1.5 lbs.; and Regent 2.3 lbs. Despite the presence of some green, bleached or shrunken kernels Marquis graded well. It was slightly inferior to Apex, equalled Renown and exceeded the other varieties in commercial grades. More loose smutted heads appeared in Marquis than in any of the other varieties but in this zone it was free from stem rust and covered smut infection. The loss from shattering equalled the loss sustained by Apex and approximately equalled the loss to Regent, but Marquis showed somewhat less loss than the other varieties.

Thatcher yielded significantly more than any of the other varieties. It tied with Renown and exceeded the other varieties in earliness. It excelled in straw strength but was somewhat inferior to nearly all varieties in weight and commercial grades. The performance of Rival was generally fairly satisfactory. It yielded significantly more than all varieties except Thatcher, excelled in height, was intermediate in straw strength and although somewhat low in bushel weight ranked fourth in commercial grades. Only slight differences appeared in the yields of Apex, Regent and Renown, but Renown exceeded the other two varieties in "earliness," straw strength and bushel weight. It was slightly inferior to Apex in commercial grades but graded decidedly better than Regent. Marquis was low in yield although Thatcher and Rival were the only varieties which yielded significantly more than the standard variety. Marquis while showing fairly good height was later than the other varieties and tied with Regent in showing the weakest straw. It ranked second to Renown in bushel weight, outweighing the other varieties.

TABLE No. 15—SUMMARIZED RESULTS FOR ZONE 2 D

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	20.8	23.8	21.4	21.1	21.3	22.6
Days from seeding to ripening.....	102.0	99.9	100.9	99.9	100.1	101.9
Height of plant in inches....	32.8	32.1	33.0	32.4	32.3	33.3
Straw strength.....	9.2	9.6	9.3	9.4	9.2	9.4
Bushel weight in pounds....	62.1	60.6	61.8	62.3	59.8	61.6
Commercial grades in percentage.....						
1 Hard	46	15	46	46	—	38
1°	31	38	38	31	46	23
2°	23	39	8	23	31	31
3°	—	8	8	—	8	8
4°	—	—	—	—	8	—
5 Spec.	—	—	—	—	7	—

Necessary difference—1.2 bushels.

While the superiority of Thatcher in yielding ability is somewhat offset by its relatively low bushel weight and commercial grades, its earliness and superior straw strength somewhat compensates for these deficiencies. The performance in this test would indicate that at least it is one of the best varieties for the zone. In the 1938 test Thatcher also showed considerable merit. Rival yielded and graded fairly well but its comparatively long maturity period may prove a handicap in this area. Of the three varieties—Apex, Renown and Regent—the general performance of Apex

shows most merit. Although it showed good bushel weight and commercial grades, Marquis appears to have no outstanding advantage over most of the other varieties. This zone has not, in the past, suffered severely from the attacks of rust but the results indicate that the general performance of Thatcher, Rival and Apex are most worthy of consideration. Since one year's results are not conclusive, it should be mentioned that the combined tests of 1937, 1938 and 1939 show Thatcher and Apex distinctly better than Renown or Marquis; Thatcher yielded a bushel more than Apex but the latter graded much better and was almost equally strong strawed and only one day later.

Cereal Variety Zone 3A

Summarized results for Zone 3A appear in Table No. 16. This Zone represents an area in the southeastern part of the Province. Early in the season high winds resulted in considerable soil-drifting and frost caused a severe set back. At the beginning of June moisture was inadequate over most of the area and a heavy grasshopper infestation was reported. During the second week in June some moisture was received, the precipitation ranging from light showers to rains of a beneficial nature. In the last two weeks of June good rains were received which considerably improved the condition of the tests, but the presence of grasshoppers was still causing considerable concern. By the middle of July, however, hot winds had depleted moisture reserves and nearly all tests in this zone were suffering severely. Grasshoppers were increasing their activities and some damage had occurred. Deterioration steadily increased and in the southern and central areas of the zone yields were extremely light. In the northern part of the region the outturn was somewhat better and fair yields were recorded.

Thatcher again excelled in yield in this zone, yielding significantly more than any of the other varieties. It was slightly later than Renown and Regent but was from .3 day to 1.7 days earlier than the other varieties. Thatcher was exceeded in height by all varieties by differences ranging from .3 inch to 1.7 inches. It excelled in straw strength. With the exception of Regent which weighed 2.1 lbs. less it was outweighed by all varieties by the following differences: Rival .5 lb.; Marquis .6 lb.; Apex .8 lb.; and Renown 1.1 lbs. Nearly all samples contained bleached and shrunken kernels and with the exception of Regent, Thatcher was inferior to all varieties in commercial grades. Two tests showed a small percentage of loose smutted heads but Thatcher appeared free from covered smut and stem rust infection. Thatcher showed considerably less loss from shattering than Rival and approximately equalled the loss to the other varieties.

Rival was second in yielding ability. The actual difference between this variety and Renown failed to equal the necessary difference for the zone and the difference between Rival and Regent barely equalled the necessary difference. Rival, however, yielded significantly more than Apex and Marquis. In earliness Rival exceeded both Apex and Marquis by differences of .6 day and 1.4 days respectively but was approximately .5 day later than the other varieties. Rival exceeded all varieties in height by differences of .7 inch to 1.7 inches. In straw strength it was slightly superior to Apex but was slightly inferior to the other varieties. Rival was exceeded in weight by Apex and Renown by differences of .3 lb. and .6 lb. respectively. It approximately equalled Marquis in bushel weight and outweighed Thatcher by .5 lb. and Regent by 2.6 lbs. Shrunken and some bleached or green kernels were in evidence in nearly all samples and Rival ranked third in commercial grades being superior in grades only to Marquis, Thatcher and Regent. One test showed a small percentage of loose smutted heads. No covered smut was reported but in one test a very slight trace of stem rust was also in evidence. The loss by shattering sustained by Rival was decidedly more than the loss of the other varieties.

Renown ranked third in yield. It failed to outyield Regent by an actual difference which equalled the necessary difference but yielded significantly more than Marquis or Apex. It approximately tied with Regent in earliness and exceeded the other varieties by differences ranging from .1 day to nearly 2 days. With the exception of Thatcher which was .3 inch shorter Renown was exceeded in height by all varieties by differences ranging from .4 inch to 1.4 inches. Renown was slightly weaker in straw than Thatcher, tied with Marquis in this characteristic but was somewhat superior to the other varieties. It excelled in bushel weight, outweighing all varieties by the following differences: Apex .3 lb.; Marquis .5 lb.; Rival .6 lb.; Thatcher 1.1 lbs. and Regent 3.2 lbs. All samples contained some bleached, green or shrunken kernels but Renown also slightly exceeded the other varieties in commercial grades. Only a very small percentage of loose smutted heads

appeared in one test and Renown appeared free from covered smut and stem rust infection. The amount of loss by shattering sustained by this variety was about half the loss of Rival and approximately equal to the loss of the other varieties.

Regent was fourth in yield but failed to yield significantly more than either Apex or Marquis. It excelled in earliness ripening from .1 day to nearly 2 days earlier than the other varieties. In height it was slightly exceeded by Marquis and exceeded by Rival by a difference of nearly 1 inch. It was, however, slightly taller than the other varieties, the differences ranging up to .8 inch. In straw strength Regent was somewhat superior to Apex and slightly superior to Rival but was inferior to the other varieties in this characteristic. It was outweighed by all varieties by the following differences: Thatcher 2.1 lbs.; Rival 2.6 lbs.; Marquis 2.7 lbs.; Apex 2.9 lbs. and Renown 3.2 lbs. Bleached, shrunken and some green kernels were in evidence in all samples and these defects combined with light weight resulted in Regent being decidedly low in commercial grades. A small percentage of loose smutted heads were recorded in one test but Regent was free from covered smut and loose smut infection. The loss from shattering was one half the loss of Rival and approximately equalled the loss of the other varieties.

Apex ranked fifth in yielding ability. It outyielded Marquis by only a slight difference and failed to yield significantly more than the latter variety. With the exception of Marquis, which was .8 day later, it was exceeded in earliness by all varieties by differences ranging from .6 day to 1.1 days. It was somewhat taller than Thatcher and Renown, practically equalled Regent in height but was exceeded by Rival and Marquis by 1 inch and .3 inch respectively. It was inferior to all varieties in straw strength. With the exception of Renown, which exceeded it by .3 lb. it outweighed all varieties by the following differences: Marquis .2 lb.; Rival .3 lb.; Thatcher .8 lb.; and Regent 2.9 lbs. A number of samples contained shrunken and some green kernels but Apex was second to Renown in commercial grades. It was free from loose smut, covered smut and stem rust infection. The loss by shattering was decidedly less than the loss sustained by Rival and was about equal to the loss of the other varieties.

Marquis was low in yield. It was later than all varieties by differences ranging from .8 day to nearly 2 days. Marquis was exceeded in height by Rival by .7 inch but was from .2 inch to 1 inch taller than the other varieties. In straw strength it was slightly inferior to Thatcher, tied with Renown but was decidedly superior to Apex and slightly superior to Regent and Rival. Marquis outweighed Rival, Thatcher and Regent by differences of .1 lb.; .6 lb.; and 2.7 lbs. respectively but was exceeded in weight by Apex by .2 lb.; and Renown by .5 lb. Nearly all samples contained green and shrunken kernels and Marquis ranked fourth in commercial grades, grading lower than Rival, Apex and Renown. No loose or covered smut appeared in the Marquis variety but in a number of tests stem rust infection ranging from 1—18% was recorded. The amount of shattering was about half the loss sustained by Rival and approximately equal to the loss of the other varieties.

Thatcher was the highest yielder, yielding significantly more than the other varieties. With the exception of Regent it was exceeded in both bushel weight and commercial grades by all varieties. Rival yielded significantly more than Regent, Apex and Marquis. It was somewhat weak in straw but was reasonably satisfactory in other characteristics. Renown yielded significantly more than Apex or Marquis. It excelled in bushel weight and graded slightly better than the other varieties. Regent failed to outyield either Apex or Marquis by differences which equalled the necessary difference for the zone. It was somewhat weak in straw and decidedly poor in bushel weight and commercial grade. Apex only outyielded Marquis by a very slight difference. It was weak in straw but weighed and graded comparatively well. Marquis was low in yield but weighed relatively well. In most of the other characteristics it was reasonably satisfactory although a superabundance of shrunken and green kernels resulted in somewhat low grades. In a number of tests stem rust infection appeared on this variety.

The results of the 1939 test show the worthiness of Thatcher for use in this zone where rust infection has previously taken a heavy toll. In two out of three years prior to 1939 Thatcher exceeded the other varieties in yield. In 1938, however, Renown excelled. Apex has also yielded comparatively well in previous tests. The general performance of Rival, Renown and Apex in the 1939 test would indicate that each of these varieties have some characteristics which are superior to the Thatcher variety, and which may influence the grower in their favour.

TABLE No. 16—SUMMARIZED RESULTS FOR ZONE 3A

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	14.9	18.0	15.0	15.9	15.4	16.2
Days from seeding to ripening.....	99.7	98.0	98.9	97.9	97.8	98.3
Height of Plant in inches....	31.2	30.2	30.9	30.5	31.0	31.9
Straw strength.....	8.9	9.0	8.3	8.9	8.8	8.6
Bushel weight in pounds....	58.1	57.5	58.3	58.6	55.4	58.0
Commercial grades in percentage.....						
1 Hd.	4	4	9.	5.	—	9.
1°	14	9	23.	36.	9.	14.
2°	27	32.	9.	18.	9.	23.
3°	18	18.	32.	14.	14.	27.
4°	23	14.	14.	9.	14.	9.
No. 5	—	—	—	—	18.	—
No. 6	—	—	—	—	—	—
Fd.	—	—	—	—	5.	—
4 Sp.	14	18.	15.	18.	18.	14.
5 Sp.	—	—	—	—	4.	4.
6 Sp.	—	5.	—	—	9.	—

Necessary Difference—.8 bushel.

Cereal Variety Zone 3B

The results for Zone 3B are shown in Table No. 17. This zone consists of a small area in the east-centre part of the Province immediately adjacent to the Manitoba border. Moisture conditions at the time of seeding were far from satisfactory. High winds caused some damage but good rains later in the season considerably improved the condition of the tests. Hot winds during July caused some deterioration but generally yields were of a satisfactory nature.

Thatcher also excelled in yield in this zone, yielding significantly more than any of the other varieties. With the exception of Renown which ripened .8 day earlier, Thatcher exceeded all varieties in "earliness" by differences ranging from .3 day to 2.3 days. It was exceeded in height by all varieties by differences which ranged from .7 inch to 2.5 inches. Thatcher excelled in straw strength, being decidedly superior in this characteristic to the other varieties. In bushel weight it exceeded Rival and Regent by .1 lb. and .5 lb. respectively but was outweighed by the other varieties by the following differences: Marquis .3 lb.; Apex .5 lb.; and Renown .9 lb. Some bleached, shrunken, green or immature kernels were in evidence in all samples and these defects combined with relatively light weight resulted in Thatcher being exceeded by all varieties in commercial grades. No rust infection appeared on the stems of this variety. It appeared to be free from loose or covered smut and no loss from shattering was reported.

Rival ranked second in yielding ability but failed to yield significantly more than the other varieties. In "earliness" Rival exceeded Marquis by 1.7 days, and Apex by .4 day but was later than the other varieties by differences which ranged from .3 day to 1.4 days. Rival excelled in height being from .2 inch to 2.5 inches taller than the other varieties. In straw strength it was inferior to Thatcher, Marquis and Renown but was superior in this characteristic to Apex and Regent. With the exception of Regent, which weighed .4 lb. less Rival was exceeded in bushel weight by all varieties, being outweighed by the following differences: Thatcher .1 lb.; Marquis .4 lb.; Apex .6 lb.; and Renown 1.0 lb. Nearly all samples contained green, immature or starchy kernels and Rival exceeded only Thatcher in commercial grades. It appeared free from stem rust and smut infection but suffered considerably more loss from shattering than any of the other varieties.

Regent was third in yielding ability but failed to yield significantly more than Renown, Apex or Marquis. It was exceeded in "earliness" by both Thatcher and Renown by .3 day and 1.1 days respectively but ripened earlier than the other varieties by differences which ranged from .3 day to 2 days. In height Regent exceeded Thatcher and Apex by 1.4 inches and .7 inch respectively but it was from .5 inch to 1.1 inches shorter than the other varieties. In straw strength it was only slightly superior to Apex and was decidedly inferior in this characteristic to all other varieties. Regent was low in bushel weight being exceeded by all varieties by the following differences: Rival .4 lb.; Thatcher .5 lb.; Marquis .8 lb.; Apex 1 lb. and Renown 1.4 lbs. Bleached, green or immature kernels were in evidence in all samples and although the difference in commercial grades between the different varieties was not of a marked nature despite these defects and relatively light weight Regent graded somewhat better than Thatcher or Rival. Regent

was free from stem rust and smut infection and no loss from shattering was reported.

Renown was fourth in yield but the actual differences between this variety and either Apex or Marquis did not equal the necessary difference for the zone. It was the earliest maturing variety, exceeding the other varieties by differences ranging from .8 day to 3.1 days. Renown was slightly exceeded in height by Rival but was taller than the other varieties by differences ranging from .4 inch to 2.3 inches. It was somewhat weaker in straw than Thatcher or Marquis but was superior in this characteristic to the other varieties. Renown excelled in bushel weight, outweighing the other varieties by differences ranging from .4 lb. to 1.4 lbs. Nearly all samples contained some green, immature or starchy kernels and in a few samples black point was in evidence. These defects considerably affected the commercial grades in some tests but Renown was definitely inferior in grade only to Regent. No stem rust or covered smut was reported and only a slight trace of loose smut infection was shown in one test. Some loss by shattering was also reported but the loss was only half the amount of loss in the Rival variety.

Apex was fifth in yield but failed to yield significantly more than Marquis. With the exception of Marquis which was 1.3 days later it was exceeded in earliness by all varieties, the differences ranging from .4 day to 1.8 days. Apex exceeded Thatcher in height by .7 inch but was from .7 inch to 1.8 inches shorter than the other varieties. It was inferior in straw strength to all varieties, being decidedly inferior to Thatcher. Apex ranked second to Renown in bushel weight, the difference between these two varieties being only .4 lb. It outweighed the other varieties by the following differences: Marquis .2 lb.; Thatcher .5 lb.; Rival .6 lb.; and Regent 1 lb. A number of samples showed some shrunken and green kernels and some black point was also in evidence in most tests but despite these defects Apex was superior to the other varieties in commercial grades. No stem rust or smut infection was reported and only a very slight loss from shattering was shown.

Marquis was low in yield. It was later than the other varieties by differences ranging from 1.7 days to 3.1 days. Marquis was approximately .5 inch shorter than Rival and Renown but exceeded the other varieties in height by the following differences: Regent .5 inch; Apex 1.2 inches and Thatcher 1.9 inches. It was somewhat inferior in straw strength to Thatcher but was superior in this characteristic to the other varieties. Marquis was exceeded in bushel weight by Apex and Renown by differences of .2 lb. and .6 lb. respectively but outweighed the other varieties by the following differences: Thatcher .3 lb.; Rival .4 lb.; and Regent .8 lb. Nearly all samples contained some green, bleached, immature or starchy kernels but Marquis graded relatively well, being definitely exceeded in grade only by Apex and Renown. No loose or covered smut was in evidence but Marquis was infected by stem rust, the average amount of the infection being shown as 6.7%. No loss by shattering was reported.

Thatcher was distinctly the highest yielder in this zone yielding significantly more than any of the other varieties. It excelled in straw strength, was reasonably satisfactory in earliness and although somewhat exceeded by some of the other varieties in height, bushel weight and commercial grades the differences were not of a marked nature. None of the other varieties in this zone yielded significantly more than another. Rival was not outstanding in any characteristic and the loss it sustained in shattering was a handicap. Regent was relatively weak in straw, low in bushel weight and somewhat low in commercial grades. Renown was reasonably satisfactory in height and straw strength. It excelled in earliness and bushel weight and despite green, immature and starchy kernels with some evidence of black point it ranked second to Apex in commercial grade. Apex was weak in straw. It showed no particular merits in yield, earliness or height but despite certain defects it excelled in commercial grades. Marquis was later than the other varieties. It showed no particular merits of an outstanding nature and the presence of stem rust infection suggests the danger of its continued use where heavy losses from previous rust epidemics have occurred.

The results of this test indicate that Thatcher is at least one of the best varieties for use in this zone. This is confirmed by the results of previous tests, Thatcher having outyielded all other varieties in two out of the three years prior to 1939 but the general performance of Renown in the 1939 test suggests it is deserving of some consideration in the choice of a variety for this area. Rival also showed an advantage in some characteristics over the other varieties, but further tests are necessary before any definite information is available in connection with this variety.

TABLE No. 17—SUMMARIZED RESULTS FOR ZONE 3 B

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	36.0	41.8	36.3	36.8	37.8	38.4
Days from seeding to ripening.....	105.1	102.8	103.8	102.0	103.1	103.4
Height of plant in inches....	37.1	35.2	35.9	37.5	36.6	37.7
Straw strength.....	8.7	9.1	7.9	8.5	8.0	8.4
Bushel weight in pounds....	63.5	63.2	63.7	64.1	62.7	63.1
Commercial grades in percentage.....	1 Hd.	—	12	12	—	—
1°	25	12	13	—	12	25
2°	25	25	25	50	50	12
3°	50	63	50	25	13	63
4°	—	—	—	13	25	—

Necessary Difference—2.6 bushels.

Cereal Variety Zone 3C

Summarized results for Zone 3C are tabulated in Table No. 18. This zone represents an area in the east-central portion of the Province. At the time of seeding moisture conditions were very unsatisfactory. The topsoil was dry and high winds prevailed. Good rains fell over most of the area, however, during the first week of June, greatly improving the condition of the tests. Further moisture was received throughout June and although some frost was reported, generally at the end of the month the tests had made good progress, the only major threat being the heavy grasshopper infestation, particularly in the southern portion of the zone. At this time, however, these pests had caused but little injury. High temperatures with drying winds prevailed during the greater part of July and the beginning of August and some deterioration occurred, the most serious declines appearing in the southeastern part of the zone. Generally, however, the tests withstood the adverse weather conditions much better than anticipated. Yields ranged from fair to excellent and contrary to expectation pests caused but little damage. Stem rust was in evidence on the Marquis variety in many of the tests, the degree of infection being most heavy in the northern portion of the zone.

Thatcher again excelled in yield, yielding significantly more than any of the other varieties. Thatcher and Renown were approximately equal in "earliness" but Thatcher ripened from .2 day to 2.3 days earlier than the other varieties. In height it was exceeded by all varieties by differences which ranged from .9 inch to 2.9 inches. Thatcher was slightly inferior to Renown in straw strength, it tied with Marquis in this characteristic but was slightly superior to Regent and Rival and somewhat superior to Apex. Thatcher exceeded Regent in bushel weight by .8 lb. but was outweighed by the other varieties by the following differences: Rival .2 lb.; Marquis and Apex .5 lb.; and Renown 1.3 lbs. A number of samples contained bleached, shrunken or green kernels and these defects together with somewhat inferior weight resulted in Thatcher ranking fifth, exceeding only Regent, in commercial grades. No stem rust, loose smutted heads or covered smut was reported but some shattering occurred, the percentage of loss being slightly more than the loss sustained by Apex, Renown or Rival and decidedly more than the loss to Marquis or Regent.

Regent was second in yielding ability. The actual differences between this variety and either Renown or Rival failed to equal the necessary difference for the zone but Regent yielded significantly more than Apex or Marquis. Regent was slightly later than Thatcher or Renown but ripened from .4 day to 2.1 days earlier than the other varieties. In height Regent was exceeded by Rival by a difference of 1.5 inches but was from .1 inch to 1.4 inches taller than the other varieties. It was somewhat superior in straw strength to Apex and slightly superior to Rival but was inferior to the other varieties in this characteristic. In bushel weight Regent was exceeded by all varieties by the following differences: Thatcher .8 lb.; Rival 1 lb.; Marquis and Apex 1.3 lbs.; and Renown 2.1 lbs. Bleached, shrunken or green kernels were in evidence in nearly all samples and these defects, together with low bushel weight, resulted in Regent being inferior to all varieties in commercial grades. No loose or covered smut was reported but in one test a very slight infection of stem rust was in evidence. Regent was practically free from loss by shattering.

Renown was third in yielding ability. A difference of only .1 bushel appeared between the yield of this variety and Rival. Renown, however, exceeded the yield of Apex by a difference which equalled the necessary

difference for the zone and yielded significantly more than Marquis. It excelled in "earliness" exceeding the other varieties by differences ranging from .1 day to 2.4 days. In height Renown exceeded Marquis and Thatcher by .3 inch and 1.2 inches respectively but it was from .1 inch to 1.7 inches shorter than the other varieties. It excelled in straw strength being particularly superior to Apex and Rival and slightly superior to the other varieties. Renown also excelled in bushel weight, outweighing the other varieties by the following differences: Marquis and Apex .8 lb.; Rival 1.1 lbs.; Thatcher 1.3 lbs.; and Regent 2.1 lbs. Despite the presence of some green and shrunken kernels it exceeded all varieties in commercial grades. No covered smut or loose smut was reported. A very slight trace of rust infection appeared on the stems of this variety in one test. Loss by shattering was approximately equal to the loss to Apex and Rival, somewhat less than Thatcher but exceeded the loss sustained by the Marquis and Regent varieties.

Rival was fourth in yield but the difference between this variety and Renown and Regent was only .1 lb., and .2 lb. respectively. Rival failed to exceed Apex by a difference which equalled the necessary difference for the zone but it yielded significantly more than Marquis. Rival ripened nearly 1.5 days earlier than Marquis but was later than the other varieties by differences ranging from .3 day to 1 day. It excelled in height, being from 1.5 inches to nearly 3 inches taller than the other varieties. It was somewhat superior to Apex in straw strength but was inferior in this characteristic to the other varieties. Rival was outweighed by Marquis and Apex by .3 lb., and by Renown by 1.1 lb., but exceeded Thatcher in bushel weight by .2 lb., and Regent by 1 lb. Bleached, shrunken or green kernels appeared in nearly all samples and Rival ranked fourth in commercial grades. No smut or stem rust infection was reported. Rival, Renown and Apex were practically equal in the losses sustained by shattering. They showed somewhat less loss than Thatcher but more than Marquis or Regent.

Apex ranked fifth in yield. The actual difference in yield between this variety and Marquis failed to equal the necessary difference for the zone. In "earliness" it exceeded Rival and Marquis by differences of .3 day and 1.7 days respectively but ripened from .4 day to .7 day later than the other varieties. Little differences appeared between the heights of Apex, Renown and Regent. Apex, however, was .4 inch taller than Marquis and 1.3 inches taller than Thatcher but was exceeded in height by Rival by 1.6 inches. Apex was somewhat inferior in straw strength to all varieties. In bushel weight Apex was exceeded by Renown by .8 lb. It equalled Marquis and outweighed the other varieties by the following differences: Rival .3 lb.; Thatcher .5 lb.; and Regent 1.3 lbs. A number of samples contained some green, shrunken or bleached kernels. Some black point was in evidence in a few samples. Despite these defects Apex graded relatively well. It was exceeded in commercial grades by Renown, practically equalled Marquis but graded better than the other varieties. No stem rust or smut infection was reported. The loss by shattering was approximately equal to Renown and Rival, somewhat less than Thatcher but more than Marquis or Regent.

Marquis was low in yield. It was later than all varieties, the difference in maturity period between Marquis and the other varieties ranging from 1.4 days to 2.4 days. With the exception of Thatcher, which was .9 inch shorter, Marquis was exceeded by all varieties in height by differences of from .3 inch to 2 inches. In straw strength it was slightly inferior to Renown, equalled Thatcher in this characteristic but was slightly superior to the other varieties. Marquis was outweighed only by Renown by a difference of .8 lb. It equalled Apex but exceeded the other varieties in bushel weight by the following differences: Rival .3 lb.; Thatcher .5 lb.; and Regent 1.3 lbs. Nearly all samples contained some shrunken and also a superabundance of green kernels but despite these defects Marquis ranked third in commercial grades. No loose or covered smut was reported but stem rust infection was in evidence, the average percentage of infection being shown as 10%. In this area which has suffered severely from rust epidemics the infection during the past year is significant. The loss by shattering to the Marquis variety was only of a very light nature.

Thatcher was decidedly high in yield and practically equalled Renown in "earliness," ripening earlier than the other varieties. It was somewhat shorter than the other varieties and its yield performance was somewhat offset by its inferiority to some of the other varieties in bushel weight and commercial grade. Little difference appeared in the yields of Regent, Renown and Rival but apart from height Renown showed the most desirable characteristics, exceeding the other two varieties in earliness, straw strength,

bushel weight and commercial grades. Apex was outyielded by Thatcher, Regent and Renown by differences which exceeded or equalled the necessary difference for the zone. It was somewhat inferior in straw strength but reasonably satisfactory in "earliness," height, bushel weight and commercial grades. Marquis was low in yield and was also later than the other varieties. It graded relatively well but the advantage it enjoyed over Thatcher in commercial grades failed to compensate for the difference in yield. The rust infection appearing on the stems of Marquis clearly indicates the danger of its continued use in this area where heavy losses by rust have previously occurred.

The results of this test indicate that Thatcher, despite its bushel weight and commercial grades, is at least one variety suitable for use in this zone. This is confirmed by the results of previous tests, Thatcher having also outyielded all varieties in two of the three years prior to 1939. In 1938 Thatcher was outyielded by Renown, but the actual difference between these two varieties barely equalled the necessary difference for the zone. Renown, although outyielded by Thatcher in the 1939 test, shows considerable merit, its high bushel weight and superiority in commercial grades being worthy of careful consideration.

TABLE No. 18—SUMMARIZED RESULTS FOR ZONE 3C

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	32.1	37.4	33.1	34.6	34.7	34.5
Days from seeding to ripening.....	107.0	104.7	105.3	104.6	104.9	105.6
Height of plant in inches....	37.9	37.0	38.3	38.2	38.4	39.9
Straw strength.....	8.7	8.7	8.2	8.8	8.6	8.5
Bushel weight in pounds....	62.6	62.1	62.6	63.4	61.3	62.3
Commercial grades in percentage.....						
1 Hd.	36	28	40	44	16	32
1°	24	24	16	20	16	24
2°	20	28	24	24*	32	20
3°	16	16	16	8	20	12
4°	4	4	4	4	16	12

Necessary difference—1.5 bushels.

Cereal Variety Zone 3D

Summarized results for Zone 3D appear in Table No. 19. This zone consists of a small area in the north-east part of the Province. Generally moisture conditions at the time of seeding were satisfactory. At the beginning of June high winds had dried out the top soil and although none of the tests appeared to be suffering severely further moisture was required. During the second week of June good rains were received. Rains of varying amounts continued during June and although cool weather had somewhat retarded growth, at the beginning of July the tests were in excellent condition. High temperatures later in the season caused some deterioration but all tests reached maturity in a satisfactory manner and good yields were recorded.

Rival led in yield. The difference between this variety and Thatcher was only .1 bushel but Rival yielded significantly more than any of the other varieties. It was practically equal in "earliness" to Thatcher and Regent and ripened earlier than the other varieties by the following differences: Renown .5 day, Apex 1.1 days and Marquis 1.5 days. It excelled in height, being from 1.7 inches to 3.7 inches taller than the other varieties. Rival was slightly weaker in straw than Thatcher or Renown, slightly superior in this characteristic to Regent, somewhat superior to Marquis and decidedly superior to Apex. In bushel weight it exceeded Regent by .8 lb. but was outweighed by the other varieties by the following differences: Marquis .1 lb.; Thatcher .4 lb.; Apex .6 lb.; and Renown 1.4 lbs. Some bleached, green or starchy kernels were in evidence in nearly all samples and black point was also noticeable in some samples. These defects, together with relatively light weight resulted in Rival exceeding only Regent in commercial grades. No loose or covered smut was reported but in one test Rival appeared to be rather heavily infected by stem rust. In all other tests it was free from rust infection. The loss by shattering to Rival was approximately equal to the loss sustained by Regent and decidedly more than the other varieties.

Thatcher closely followed Rival in yield, the difference between these two varieties being only .1 bushel. It yielded significantly more than the other varieties. It equalled Regent in "earliness" and ripened from .1 day

to 1.6 days earlier than the other varieties. Thatcher was exceeded in height by all varieties, the differences ranging from .5 inch to 3.7 inches. In straw strength it equalled Renown, was slightly superior to Regent and Rival, somewhat superior to Marquis and decidedly superior to Apex. It exceeded Marquis, Rival and Regent in bushel weight by differences of .3 lb.; .4 lb.; and 1.2 lbs. respectively but was outweighed by Apex by .2 lb.; and by Renown by 1 lb. A number of samples contained bleached, green, shrunken or starchy kernels but Thatcher ranked third in commercial grades. It appeared to be free from loose smut, covered smut and stem rust infection. The loss by shattering was approximately one half the loss sustained by Regent and Rival but more than the other varieties.

Regent ranked third in yield. The actual difference between Regent and Renown or Apex failed to equal the necessary difference for the zone but Regent yielded significantly more than Marquis. It tied with Thatcher in "earliness," ripening from .1 day to 1.6 days earlier than the other varieties. With the exception of Rival which was 1.7 inches taller, it exceeded the other varieties in height by differences ranging from .9 inch to 2 inches. In straw strength Regent was slightly inferior to Renown, Thatcher and Rival but was somewhat superior to Marquis and showed marked superiority to Apex. It was low in bushel weight, being outweighed by the other varieties by the following differences: Rival .8 lb.; Marquis .9 lb.; Thatcher 1.2 lbs.; Apex 1.4 lbs.; and Renown 2.2 lbs. Many samples contained green, bleached or starchy kernels and these defects combined with light weight resulted in Regent being low in commercial grades. No loose smut, covered smut or stem rust infection was reported. The loss by shattering to this variety was approximately equal to the loss sustained by Rival and was considerably more than the other varieties.

Renown was fourth in yield. It failed, however, to outyield either Apex or Marquis by differences which equalled the necessary difference for the zone. In earliness it was exceeded by both Thatcher and Regent by a difference of .6 day and was .5 day later than Rival. It was, however, .6 day earlier than Apex and 1 day earlier than Marquis. With the exception of Thatcher which was .5 inch shorter it was exceeded in height by all varieties, the differences ranging from .5 inch to 3.2 inches. Renown equalled Thatcher in straw strength, and was superior in this characteristic to the other varieties, being decidedly superior to Apex. It excelled in bushel weight, outweighing the other varieties by the following differences: Apex .8 lb.; Thatcher 1 lb.; Marquis 1.3 lbs.; Rival 1.4 lbs.; and Regent 2.2 lbs. A number of samples contained some green, bleached or starchy kernels and these defects somewhat lowered the commercial grades placed on this variety; nevertheless Renown graded comparatively well, being exceeded only by Apex. Renown appeared to be free from loose or covered smut but in one test a slight trace of stem rust infection was reported. The loss by shattering to the Renown variety was slightly more than the loss to Marquis and Apex, slightly less than Thatcher but decidedly less than the loss sustained by Regent and Rival.

Apex ranked fifth in yielding ability but failed to yield significantly more than Marquis. It was .4 day earlier than Marquis but was exceeded in earliness by the other varieties by differences ranging from .6 day to 1.2 days. Apex was exceeded in height by Regent and Rival by differences of .9 inch and 2.6 inches respectively. It was practically equal in height to Marquis but was .6 inch taller than Renown and 1.1 inches taller than Thatcher. In straw strength it was decidedly inferior to the other varieties. With the exception of Renown which weighed .8 lb. more, Apex exceeded the other varieties in bushel weight by the following differences: Thatcher .2 lb.; Marquis .5 lb.; Rival .6 lb.; and Regent 1.4 lbs. A number of samples contained some green, shrunken or bleached kernels and in a few samples some black point was in evidence but despite these defects Apex excelled in commercial grades. No loose smut, covered smut or stem rust infection was reported and Apex equalled Marquis in the slight loss sustained by shattering, showing somewhat less loss than Thatcher or Renown and considerably less than Regent or Rival.

Marquis was low in yield. It was .4 day to 1.6 days later than the other varieties. Marquis was approximately equal in height to Apex and exceeded Renown and Thatcher by .5 inch and 1 inch respectively. It was, however, 1 inch shorter than Regent and 2.7 inches shorter than Rival. In straw strength it was superior to Apex but inferior to the other varieties. Marquis and Rival were practically equal in bushel weight. The standard variety, however, was .9 lb. heavier than Regent but was outweighed by the other varieties by the following differences: Thatcher .3 lb.; Apex .5 lb.;

Renown 1.3 lbs. A number of samples contained starchy or some green, shrunken or bleached kernels, but Marquis graded relatively well being definitely exceeded in commercial grades only by Apex and Renown. No loose or covered smut was reported but in a number of tests stem rust was in evidence, the percentage of infection ranging from 2% to 43%. Marquis tied with Apex in the light loss sustained by shattering, the loss being somewhat less than Thatcher or Renown and considerably less than Regent or Rival.

Rival yielded well and although somewhat low in weight and commercial grades, in many other characteristics it was reasonably satisfactory. Its tendency to shatter easily, however, may be a handicap. Thatcher practically equalled Rival in yield, and yielded significantly more than the other varieties. It was exceeded by some of the other varieties in height, bushel weight and commercial grades but generally the differences were not of a marked nature and its other characteristics were reasonably satisfactory. Regent failed to outyield either Renown or Apex by a difference equal to the necessary difference but yielded significantly more than Marquis. The relatively light weight of this variety and low grades together with its loss by shattering were, however, a disadvantage. Renown failed to outyield either Apex or Marquis by a difference which equalled the necessary difference for the zone but it excelled in bushel weight and ranked second in commercial grades. Apex also failed to yield significantly more than Marquis. It was decidedly weak in straw but showed reasonably good bushel weight and excelled in commercial grades. Marquis was low in yield. It was the latest maturing variety, was somewhat weak in straw but in bushel weight and commercial grades it was fairly satisfactory. The presence of stem rust infection in a number of tests, however, is significant, its susceptibility to rust attacks being a distinct disadvantage in this area.

Generally Thatcher appears to have made the best showing. Rival, although somewhat low in commercial grades, yielded well in this test, and showed considerable merit in other characteristics but its tendency to shatter easily is a handicap. Further tests are required in connection with this variety before any definite information is available. Considering the three year period 1937—1939 Thatcher's supremacy in yield is upheld, but Apex and Renown only averaged 5% and 7% less, respectively, and graded better. Marquis on the other hand averaged 22% less than Thatcher in yield, which aside from rust susceptibility is a severe handicap. The three year's results indicate the suitability of Thatcher, Apex and Renown for this zone.

TABLE No. 19—SUMMARIZED RESULTS FOR ZONE 3D

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	33.5	40.8	34.7	35.1	37.3	40.9
Days from seeding to ripening.....	107.6	106.0	107.2	106.6	106.0	106.1
Height of plant in inches..	38.0	37.0	38.1	37.5	39.0	40.7
Straw strength.....	8.8	9.3	8.1	9.3	9.1	9.2
Bushel weight in pounds...	63.3	63.6	63.8	64.6	62.4	63.2
Commercial grades in percentage.....						
1 Hd.	40	30	50	40	20	20
1°	20	30	20	40	30	40
2°	10	30	20	—	20	30
3°	20	—	—	20	20	—
4°	10	10	10	—	10	10

Necessary difference—2.8 bushels.

Cereal Variety Zone 3E

Table No. 20 shows the results for Zone 3E. This zone consists of an area in northwest Saskatchewan, reaching from a point immediately east of the third meridian to the Alberta border. At the time of seeding moisture conditions were generally satisfactory. At the beginning of June, however, a general rain was required over the entire zone. Grasshoppers were present in many areas and some damage was reported. Good rains which fell during the first week of June considerably improved the condition of the tests and although some frost had occurred, no serious injury was reported. Light to heavy precipitation continued during June and at the end of the month, although growth was somewhat backward, generally the tests were in good condition and the extent of grasshopper damage was only of a relatively light nature. Hot winds prevailed during July and some deterioration occurred, the declines in the condition of the tests being particularly noticeable in the western part of the zone. Throughout

most of the area, however, the tests reached maturity in fairly good condition and fair to good yields were recorded.

Thatcher excelled in yield, yielding significantly more than the other varieties. In "earliness" it was practically equal to Renown and Regent and ripened earlier than the other varieties by the following differences: Apex .7 day, Rival .9 day and Marquis 2.4 days. Thatcher was exceeded in height by all varieties by differences ranging from .8 inch to nearly 3 inches. It was slightly inferior in straw strength to Renown but was superior to the other varieties, being decidedly superior to Apex. Thatcher weighed nearly 1 lb. more than Regent but was outweighed by the other varieties by the following differences: Rival .1 lb.; Apex .6 lb.; Marquis .8 lb.; and Renown 1.5 lbs. Many samples contained bleached, shrunken or green kernels and because of these defects together with relatively light weight, Thatcher ranked fifth in commercial grades. In one test a very slight trace of loose smutted heads was in evidence but no covered smut was reported and Thatcher was free from stem rust infection. The loss from shattering was approximately 50% of the loss sustained by Rival, somewhat less than Apex and approximately equal to the loss of the other varieties.

Regent ranked second in yielding ability. The actual difference between Regent and Rival was not quite equal to the necessary difference for the zone. The difference between Regent and Renown, however, equalled the necessary difference and Regent yielded significantly more than Marquis or Apex. In "earliness" it equalled Renown and exceeded the other varieties by differences ranging from .1 day to 2.5 days. In height Regent was exceeded by Rival by a difference of 1.8 inches. It was practically equal to Marquis and taller than the other varieties by differences ranging from .3 inch to 1.1 inches. In straw strength Regent was slightly inferior to Renown and Thatcher, slightly superior to Marquis and showed superiority to both Rival and Apex in this characteristic. It was low in bushel weight, being outweighed by the other varieties by the following differences: Thatcher .9 lb.; Rival 1 lb.; Apex 1.5 lbs.; Marquis 1.7 lbs.; and Renown 2.4 lbs. Nearly all samples contained green, shrunken, bleached or immature kernels and Regent was also low in commercial grades. It was free from loose smut, covered smut and stem rust infection. The loss by shattering to Regent was approximately one half the loss sustained by Rival, was somewhat less than Apex and nearly equalled the loss of the other varieties.

Rival was third in yield but the difference between this variety and Renown was only .1 bushel. It also failed to outyield Marquis by a difference which equalled the necessary difference for the zone but yielded significantly more than Apex. It exceeded Marquis in "earliness" by 1.5 days but was from .2 day to 1 day later than the other varieties. It excelled in height being taller than the other varieties by differences ranging from 1.7 inches to nearly 3 inches. In straw strength it was somewhat superior to Apex but was inferior in this characteristic to the other varieties. Rival exceeded Regent in bushel weight by 1 lb., was approximately equal to Thatcher but was outweighed by the other varieties by the following differences: Apex .5 lb.; Marquis .7 lb.; and Renown 1.4 lbs. Bleached, shrunken or green kernels were in evidence in nearly all samples and Rival ranked fourth in commercial grades. No loose smut, covered smut or stem rust was reported but, with the exception of Apex which showed a loss only slightly less than Rival, the latter variety showed nearly twice as much loss from shattering as the other varieties.

Renown ranked fourth in yield but the difference between this variety and Rival was only .1 bushel. Renown failed to outyield Marquis by an actual difference which equalled the necessary difference for the zone but yielded significantly more than Apex. In "earliness" it equalled Regent and ripened from .1 day to 2.5 days earlier than the other varieties. Renown was exceeded in height by Regent, Marquis and Rival by differences of .3 inch, .4 inch and 2.1 inches respectively. It equalled Apex in height and was .8 inch taller than Thatcher. It excelled in straw strength being decidedly superior to Apex and Rival. It also excelled in bushel weight, outweighing the other varieties by the following differences: Marquis .7 lb.; Apex .9 lb.; Rival 1.4 lbs.; Thatcher 1.5 lbs.; and Regent 2.4 lbs. Many samples contained some bleached, shrunken or green kernels but despite these defects Renown also excelled in commercial grades. Only in one test was a slight percentage of loose smutted heads reported and Renown appeared to be free from covered smut or stem rust infection. The loss by shattering was approximately 50% less than the loss sustained by Rival, was somewhat less than Apex and approximately equal to the loss of the other varieties.

Marquis was fifth in yield but it failed to yield significantly more than **Apex**. It was the latest maturing variety, exceeding the other varieties in its maturity period by differences ranging from 1.5 days to 2.5 days. With the exception of **Rival** which was 1.7 inches taller it exceeded all varieties in height by differences which ranged from .1 inch to 1.2 inches. In straw strength **Marquis** was somewhat inferior to **Renown** and slightly inferior to **Thatcher** and **Regent** but was superior in this characteristic to **Apex** and **Rival**. It was exceeded in bushel weight by **Renown** by a difference of .7 lb. but outweighed the other varieties by the following differences: **Apex** .2 lb.; **Rival** .7 lb.; **Thatcher** .8 lb.; and **Regent** 1.7 lbs. Many samples contained shrunken, green or bleached kernels. In some tests very green kernels resulted in particularly poor grades but despite these defects taking the zone as a whole **Marquis** graded relatively well. A slight trace of loose smutted heads was in evidence in one test but no covered smut was reported. Stem rust infection appeared on the **Marquis** variety in the central and eastern parts of the zone, the percentage of infection ranging from 3% to 37%. The loss by shattering was approximately 50% less than the loss sustained by **Rival**, somewhat less than **Apex** but was approximately equal to the loss of the other varieties.

Apex was low in yield in this zone. It ripened earlier than **Rival** or **Marquis** by differences of .2 day and 1.7 days respectively but was from .7 day to .8 day later than the other varieties. **Apex** was .8 inch taller than **Thatcher**, was equal in height to **Renown** but was from .3 inch to 2.1 inches shorter than the other varieties. It was weaker in straw than any of the varieties. **Apex** was exceeded in bushel weight by **Marquis** and **Renown** by differences of .2 lb., and .9 lb. respectively but outweighed the other varieties by the following differences: **Rival** .5 lb.; **Thatcher** .6 lb.; and **Regent** 1.5 lbs. A number of samples contained some bleached, shrunken or green kernels but despite these defects **Apex** graded comparatively well, practically equalling **Renown** and exceeding the other varieties in commercial grades. In one test a number of loose smutted heads were in evidence but **Apex** was free from covered smut or stem rust infection. The loss by shattering was slightly less than the loss reported to **Rival** but somewhat more than the loss sustained by the other varieties.

TABLE No. 20—SUMMARIZED RESULTS FOR ZONE 3E

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	30.4	34.1	29.5	30.7	31.8	30.8
Days from seeding to ripening.....	104.5	102.1	102.8	102.0	102.0	103.0
Height of plant in inches....	37.5	36.3	37.1	37.1	37.4	39.2
Straw strength.....	9.0	9.2	8.4	9.4	9.1	8.8
Bushel weight in pounds....	62.7	61.9	62.5	63.4	61.0	62.0
Commercial grades in percentage.....						
1 Hd.	38	19	41	47	9	28
1°	25	31	37	28	31	31
2°	13	31	13	19	35	32
3°	6	9	3	—	16	3
4°	9	4	—	—	3	—
No. 5	3	—	—	—	—	—
Rej. 1	—	—	3	—	—	—
Rej. 2	3	—	—	3	3	—
Rej. 3	—	3	—	—	—	3
Sample	3	3	3	3	3	3

Necessary difference—1.1 bushels.

Thatcher yielded significantly more than any of the other varieties and although it was somewhat low in weight and grades it was reasonably satisfactory in other characteristics. **Regent** yielded significantly more than **Renown**, **Marquis** or **Apex** but its low bushel weight and commercial grades are a distinct disadvantage. **Rival** and **Renown** were practically equal in yield. Neither of these varieties outyielded **Marquis** by a difference which equalled the necessary difference for the zone, but yielded significantly more than **Apex**. **Rival** excelled in height but was somewhat weak in straw. Its bushel weight and commercial grades were reasonably satisfactory. It showed slightly more loss by shattering than **Apex**, and sustained twice the loss from shattering than to the other varieties. **Renown** tied with **Regent** in earliness, exceeding the other varieties. It excelled in straw strength, bushel weight and commercial grades. **Marquis** failed to yield significantly more than **Apex**. It was at least 1.5 days later than any of the other varieties, showed medium straw strength, and fairly good bushel weight. Although it graded well, different defects, particularly green kernels, were responsible for a considerable variation in commercial grades. In

the central and eastern parts of the zone stem rust was in evidence but no infection appeared on the stems of this variety in the west. Apex was low in yield. It was of medium height, reasonably early but was decidedly weak in straw. It showed fairly good bushel weight and practically equalled Renown and exceeded the other varieties in commercial grades.

In general, despite its comparatively light weight and low commercial grades in this test Thatcher appears to be worthy of consideration in the choice of a variety. This is confirmed by the results of tests conducted during the three years prior to 1939, Thatcher having significantly outyielded all varieties in each year. However, Apex and Renown, while outyielded by Thatcher during the past three years, have excelled Thatcher in bushel weight and grade.

Cereal Variety Zone 4A

The results for Zone 4A are summarized in Table No. 21. This zone consists of an area in the northeastern part of the Province. At the time of seeding, moisture conditions were quite satisfactory and frequent rains during the early part of the growing season resulted in good growth. High winds in July caused some lodging but generally the tests reached maturity in good condition. Stem rust infection was noticeable on the Marquis variety. Pests were not a serious factor in this zone.

Thatcher yielded significantly more than any of the other varieties. It also excelled in "earliness," exceeding the other varieties by differences ranging from .2 day to 3.4 days. Thatcher was the shortest variety in the zone, being exceeded in height by the other varieties by differences ranging from .9 inch to 3.3 inches. In straw strength it was reasonably satisfactory being slightly inferior to Renown, equalling Regent, but decidedly superior to Rival and somewhat superior to the other varieties. Thatcher outweighed Regent by .5 lb. but was exceeded in weight by the other varieties by the following differences: Rival .2 lb.; Apex .4 lb.; Marquis .6 lb.; and Renown 1.2 lbs. Some green, bleached, immature or starchy kernels were in evidence in many samples and these defects combined with relatively light weight resulted in Thatcher ranking fifth in commercial grades. No loose smut, covered smut or stem rust was reported. The loss from shattering was only of a slight nature, equalling the loss sustained by Marquis and somewhat less than the other varieties.

Apex ranked second in yield. The actual difference between this variety and Regent, Rival or Renown failed to equal the necessary difference for the zone but Apex yielded significantly more than Marquis. It exceeded Marquis in "earliness" by 2.4 days, tied with Rival in its maturity period but was from .2 day to 1 day later than the other varieties. Apex was exceeded in height by Marquis and Rival by .4 inch and 1.3 inches respectively but was taller than the other varieties by differences ranging from .2 inch to 2 inches. In straw strength it was slightly superior to Rival but somewhat inferior to the other varieties. Weighing 63.3 lbs. per bushel it was outweighed by Marquis and Renown by .2 lb. and .8 lb. respectively but exceeded the other varieties in weight by the following differences: Rival .2 lb.; Thatcher .4 lb.; and Regent .9 lb. A number of samples contained green, shrunken or bleached kernels but despite these defects Apex excelled in commercial grades. No loose smut, covered smut or stem rust was reported. The loss by shattering sustained by the Apex variety approximately equalled the loss of Rival and was somewhat more than the other varieties.

Rival was third in yield but failed to yield significantly more than Regent, Renown or Marquis. It was 2.4 days earlier than Marquis, tied in its maturing period with Apex, was slightly later than Regent, .8 day later than Renown and 1 day later than Thatcher. Rival excelled in height, exceeding the other varieties by differences ranging from .9 inch to 3.3 inches. In straw strength it was somewhat inferior to all varieties. Rival was exceeded in bushel weight by Apex, Marquis and Renown by differences of .2 lb.; .4 lb.; and 1 lb. respectively. It outweighed Thatcher, however, by .2 lb. and Regent by .7 lb. Some shrunken, green or bleached kernels were in evidence in nearly all samples and Rival ranked fourth in commercial grades being only slightly superior to Thatcher and Regent. No loose smut, covered smut or stem rust infection was reported. The loss by shattering to Rival was approximately equal to the loss sustained by Apex and somewhat more than the other varieties.

Regent was fourth in yielding ability but the actual difference between this variety and Renown or Marquis failed to equal the necessary difference

for the zone. It was 2.6 days earlier than Marquis, slightly earlier than Apex and Rival but was .6 day later than Renown and .8 day later than Thatcher. In height Regent exceeded Thatcher by nearly 1 inch but was from .9 inch to 2.4 inches shorter than the other varieties. Regent tied with Thatcher in strength of straw, and was slightly inferior to Renown, but somewhat superior to the other varieties in this characteristic. It was low in bushel weight being outweighed by the other varieties by the following differences. Thatcher .5 lb.; Rival .7 lb.; Apex .9 lb.; Marquis 1.1 lbs.; and Renown 1.7 lbs. Nearly all samples contained shrunken, green or bleached kernels and these defects combined with comparatively light weight resulted in Regent being low in commercial grades. No loose or covered smut was reported and Regent was free from stem rust infection. The loss from shattering was somewhat less than the loss sustained by Apex or Rival and approximately equal to the other varieties.

Renown ranked fifth in yield but failed to yield significantly more than Marquis. It was slightly later than Thatcher but exceeded the other varieties in "earliness" by differences ranging from .6 day to 3.2 days. In height it was exceeded by Apex, Marquis and Rival by .2 inch; .6 inch and 1.5 inches, respectively, but was .9 inch taller than Regent and 1.8 inches taller than Thatcher. Renown excelled in straw strength. It also excelled in bushel weight but the presence of green, immature, or bleached kernels resulted in Renown ranking third in commercial grades. No loose or covered smut was reported and Renown was free from rust infection. The loss by shattering to the Renown variety was somewhat less than the loss to Apex and Rival and approximately equal to the other varieties.

Marquis was low in yield. It was later than all varieties, being exceeded in earliness by differences ranging from 2.4 days to 3.4 days. Marquis was exceeded in height by Rival by a difference of nearly 1 inch but was from .4 inch to 2.4 inches taller than the other varieties. It was intermediate in straw strength being slightly inferior to Renown, Thatcher and Regent and somewhat superior to Apex and Rival. It ranked second to Renown in bushel weight, outweighing the other varieties by the following differences: Apex .2 lb.; Rival .4 lb.; Thatcher .6 lb.; and Regent 1.1 lbs. A number of samples contained some green, immature, shrunken or starchy kernels but despite these defects Marquis ranked third in commercial grades. No loose or covered smut was reported but in nearly all tests Marquis was infected by stem rust, the percentage of infection recorded being from 3% to 50%. Marquis and Thatcher were approximately equal in the amount of loss sustained by shattering but these varieties showed somewhat less loss than the other varieties.

The yield of Thatcher was outstanding. Its earliness and resistance to stem rust are also distinct advantages in this zone where the danger of severe losses by early frosts or rust epidemics must be considered. Apex failed to outyield any of the other varieties except Marquis by a difference which exceeded the necessary difference for the zone. It was somewhat weak in straw but showed reasonably good bushel weight and excelled in commercial grades. It equalled Rival in the loss by shattering and showed more loss than the other varieties. Rival failed to yield significantly more than Regent, Renown or Marquis. It was weak in straw and although it weighed fairly well it was somewhat low in commercial grades. The loss sustained by shattering by this variety although not of a heavy nature, equalled Apex and was somewhat more than the other varieties. Regent failed to outyield either Renown or Marquis by a difference which equalled the necessary difference. Its low bushel weight and inferiority in commercial grades are a handicap. The difference between the yields of Renown and Marquis also failed to equal the necessary difference for the zone. The comparative earliness, straw strength and commercial grades of Renown are worthy of consideration. Marquis was low in yield. It was more than two days later than any of the other varieties but was intermediate in straw strength and showed relatively good bushel weight and commercial grades. The comparatively long maturity period of this variety and its susceptibility to stem rust infection, however, are distinct disadvantages.

In this area which has been subject to severe rust attacks, the choice of a variety with rust resistant qualities is important. The results of this test and the results of previous tests indicate that Thatcher is at least one of the best varieties for this zone. Of the other rust resistant varieties used in the 1939 test, Apex and Renown show considerable merit. Apex excelled in commercial grades and showed comparatively good bushel weight. In the 1937 test, Apex significantly outyielded Renown. In 1938, however, Renown significantly outyielded both Thatcher and Apex and in

the 1939 test its lower yield is to a great extent offset by its advantages to some of the other varieties in earliness, straw strength, bushel weight and commercial grades. Marquis showed no outstanding advantages and its susceptibility to rust infection during the past season is significant.

TABLE No. 21—SUMMARIZED RESULTS FOR ZONE 4A

	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	34.6	39.1	36.8	35.4	36.4	36.6
Days from seeding to ripening.....	108.6	105.2	106.2	105.4	106.0	106.2
Height of plant in inches....	38.2	35.8	37.8	37.6	36.7	39.1
Straw strength.....	8.8	8.9	8.4	9.0	8.9	7.9
Bushel weight in pounds....	63.5	62.9	63.3	64.1	62.4	63.1
Commercial grades in percentage.....						
1 Hard	27	9	37	18	9	9
1°	27	37	18	36	36	36
2°	9	27	36	46	18	37
3°	37	27	9	—	37	18
4°	—	—	—	—	—	—

Necessary difference—2.1 bushels.

Cereal Variety Zone 4B

The results for Zone 4B are tabulated in Table No. 22. This zone represents Saskatchewan's most northerly grain growing area. Generally at the time of seeding, moisture conditions were fairly satisfactory but at the beginning of June, high winds had dried out the top soil and at a number of points rain was required to maintain the condition of the tests. Good rains were received during the second week of June, which were of considerable benefit, but cool weather had retarded growth. Showers continued during June and at the beginning of July the tests were in a fairly satisfactory condition, the warmer weather which prevailed at this time resulting in rapid growth. High temperatures with high winds during the latter part of July and the beginning of August resulted in some deterioration and hail was also a factor in the destruction of one test. Some frost damage was also reported, but generally the tests reached maturity in a fairly satisfactory condition.

Thatcher tied with **Rival** in yield. The actual differences between Thatcher and Regent or Apex failed to equal the necessary difference for the zone but Thatcher yielded significantly more than Renown or Marquis. Thatcher excelled in "earliness," ripening from .4 day to 3.4 days earlier than the other varieties. It was exceeded in height by the other varieties in the test by differences ranging from 1.1 inches to nearly 3 inches. It was slightly inferior in straw strength to Marquis and Renown but was slightly superior in this characteristic to the other varieties. It was practically equal in bushel weight to Rival and outweighed Regent by .4 lb. but was exceeded in weight by the other varieties by the following differences: Apex .4 lb.; Marquis .5 lb.; and Renown 1.1 lbs. Some starchy, bleached or green kernels were in evidence in a number of samples but despite these defects Thatcher graded comparatively well, being inferior in this regard only to Renown and Apex. It was free from loose smut, covered smut and stem rust infection and no loss by shattering was reported.

Rival equalled Thatcher in yielding ability. The actual difference between Rival and Regent or Apex failed to equal the necessary difference for the zone but Rival yielded significantly more than Renown or Marquis. With the exception of Marquis, which required 1.6 days more to reach maturity, Rival was from .8 day to 1.8 days later than the other varieties. It excelled in height, exceeding the other varieties by differences ranging from .2 inch to 2.8 inches. Rival was slightly inferior in straw strength to Marquis, Thatcher and Renown but was slightly superior in this characteristic to the other varieties. It weighed .3 lb. more than Regent but was exceeded in bushel weight by the other varieties by the following differences: Thatcher .1 lb.; Apex .5 lb.; Marquis .6 lb.; and Renown 1.2 lbs. Some samples contained starchy, green or frost damaged kernels and Rival tied with Marquis and Regent in commercial grades. No loose smut, covered smut, stem rust or loss by shattering was reported.

Regent ranked third in yielding ability but failed to yield significantly more than Apex, Renown or Marquis. In "earliness" it was slightly exceeded by Thatcher, the difference between these two varieties being only .4 day. It ripened earlier than the other varieties by differences which ranged from

.2 day to 3 days. Regent was exceeded in height by both Marquis and Rival by approximately 1 inch but was from .3 inch to 1.8 inches taller than the other varieties. In straw strength it was slightly superior to Apex but was somewhat inferior to the other varieties. It was low in bushel weight, being outweighed by the following differences: Rival .3 lb.; Thatcher .4 lb.; Apex .8 lb.; Marquis .9 lb.; and Renown 1.5 lbs. A number of samples contained some green, starchy or frost damaged kernels and Regent tied with Marquis and Rival in commercial grades. It was free from smut and stem rust infection and no loss from shattering was reported.

Apex was fourth in yield but failed to yield significantly more than either Marquis or Renown. It was earlier than Rival or Marquis by differences of .8 day and 2.4 days respectively but was from .4 day to 1 day later than the other varieties. Apex exceeded Thatcher in height by a difference of approximately 1 inch but was shorter than the other varieties by differences ranging from .4 inch to 1.7 inches. It was somewhat inferior in straw to all varieties. Apex was practically equal in bushel weight to Marquis, was outweighed by Renown by a difference of .7 lb., but exceeded the other varieties by the following differences: Thatcher .4 lb.; Rival .5 lb.; and Regent .8 lb. Only in a few samples were any starchy or green kernels in evidence and Apex ranked second to Renown in commercial grades. No loose smut, covered smut, stem rust infection or loss by shattering was reported.

Renown tied with Marquis in yielding ability. It was exceeded in "earliness" by Regent and Thatcher by differences of .2 day and .6 day respectively but ripened from 4 day to 2.8 days earlier than the other varieties. Renown was exceeded in height by Regent, Marquis and Rival by differences of .3 inch, 1.1 inches and 1.3 inches respectively but was .4 inch taller than Apex and 1.5 inches taller than Thatcher. It was only slightly inferior to Marquis in straw strength, showing some superiority to the other varieties in this characteristic. Renown excelled in bushel weight, outweighing the other varieties by the following differences: Marquis .6 lb.; Apex .7 lb.; Thatcher 1.1 lbs.; Rival 1.2 lbs.; and Regent 1.5 lbs. Renown also excelled in commercial grades. It was free from loose smut, covered smut and stem rust infection and no loss by shattering was reported.

Marquis equalled Renown in yield. It was later than all varieties by the following differences: Rival 1.6 days; Apex 2.4 days; Renown 2.8 days; Regent 3 days; and Thatcher 3.4 days. With the exception of Rival, which was slightly taller, it exceeded the other varieties in height by differences ranging from .8 inch to 2.6 inches. Marquis excelled in straw strength being excellent in this characteristic. It was outweighed by Renown by a difference of .6 lb., but exceeded the other varieties in bushel weight by the following differences: Apex .1 lb.; Thatcher .5 lb.; Rival .6 lb.; and Regent .9 lb. In nearly all samples a number of green or starchy kernels were in evidence and Marquis tied with Regent and Rival in commercial grades. It was free from loose smut and covered smut infection and no loss by shattering was reported. Stem rust, however, was reported in two tests, the amount of infection being shown as 18% to 40%.

TABLE No. 22—SUMMARIZED RESULTS FOR ZONE 4B

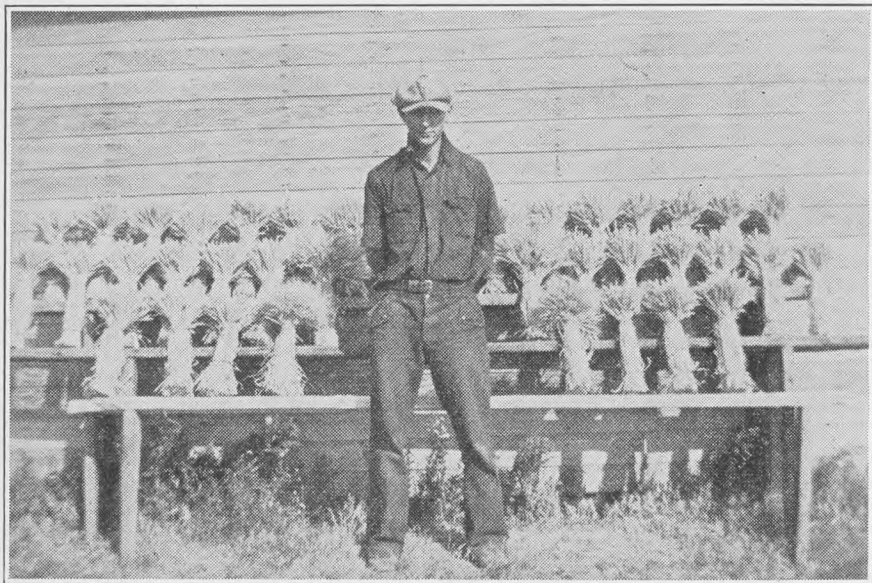
	Marquis	Thatcher	Apex	Renown	Regent	Rival
Yield in bushels per acre....	27.6	30.6	27.8	27.6	28.0	30.6
Days from seeding to ripening.....	109.4	106.0	107.0	106.6	106.4	107.8
Height of plant in inches....	39.3	36.7	37.8	38.2	38.5	39.5
Straw strength.....	10.0	9.8	9.5	9.9	9.6	9.7
Bushel weight in pounds....	63.7	63.2	63.6	64.3	62.8	63.1
Commercial grades in percentage.....	1 Hd.					
	33	33	50	50	33	33
	1°	17	17	33	17	17
	2°	33	50	17	33	33
	3°	17	—	—	17	17

Necessary difference—2.9 bushels.

Thatcher tied with Rival in yield and with the exception of Regent or Apex yielded significantly more than the other varieties. Its earliness in this northern area is a distinct advantage and it appeared reasonably satisfactory in other characteristics. Rival, although yielding well, was somewhat late in reaching maturity and was inferior to Renown, Apex and Thatcher in commercial grades. Regent failed to yield more than Apex, Renown or Marquis by differences which equalled the necessary difference

for the zone. It was comparatively early but its low weight and comparatively poor commercial grades are a handicap. Apex failed to yield significantly more than either Marquis or Renown. It was one day later than Thatcher, the earliest maturing variety, was slightly weak in straw but showed good bushel weight and commercial grades. Renown and Marquis tied in yield but Renown was nearly three days earlier than the standard variety, and was superior in both bushel weight and commercial grades.

In previous tests Thatcher has shown its worthiness for use in this zone and in 1939 it also appears to have made the best showing. Apart from its longer maturity period, Rival also appears to be reasonably satisfactory, but as the results of one year's test are not conclusive further information is necessary before any definite decisions can be made in regard to the comparative behaviour of this variety.



Laird Andrew Busch, Cutknife, Test No. 237, (Land location N.E. 9-43-21-W3rd) drying the sheaves before bagging for shipment.

GENERAL SUMMARY OF VARIETAL PERFORMANCES

Varieties Listed in Alphabetical Order

Apex.—Over the whole project Apex showed an average yield of 24.8 bushels per acre. It yielded .3 bushel more than Marquis but was outyielded by the other varieties, by the following differences: Renown .2 bushel; Rival .8 bushel; Regent 1 bushel; and Thatcher 3.3 bushels. Apex yielded significantly more than the varieties shown in the following zones: 1A, Marquis; 1B, Rival; 2A, Marquis; 4A, Marquis. In the zones not listed, Apex, although it exceeded some of the varieties in yield, failed to outyield them by differences which equalled the necessary difference for the zone. Taking the project as a whole Apex required an average of 104 days from sowing to ripening. It was 1.1 days earlier than Marquis and slightly earlier than Rival, the difference being only .1 day. It was later than the other varieties, however, by the following differences: Regent .6 day; and Renown and Thatcher .9 day. In height Apex averaged 34.7 inches. It was only .1 inch shorter than Marquis but was 1.5 inches shorter than Rival. It was, however, taller than the other varieties by the differences shown: Regent .1 inch; Renown .3 inch, and Thatcher .9 inch. Apex was inferior to all varieties in strength of straw being somewhat weaker in this characteristic to Regent and Rival and decidedly weaker than Thatcher, Marquis or Renown. Over the whole project it showed an average weight of 61.3 lbs. per measured bushel. In the south-central and south-western areas of the Province Apex equalled or slightly outweighed Renown but in the central and northern regions Renown exceeded Apex in bushel weight. Only in a few zones did Apex outweigh Marquis but in all zones Apex weighed better than Rival, Thatcher or Regent. An average of all tests shows that Apex was outweighed by Marquis and Renown by .2 lb., and .4 lb., respectively. It exceeded the other varieties in bushel weight, however, by the following differences: Rival .4 lb., Thatcher .8 lb., and Regent 1.7 lbs. The commercial grades placed on the Apex variety are shown as follows: 1 Hard, 38.3%; 1 Nor., 24.6%; 2 Nor., 15.1%; 3 Nor., 12.3%; 4 Nor., 4.3%; No. 6, .4%; 4 Spec., 2.9%; 5 Spec., 1.6%; Rej. 1, .3%; Sample .2%. Light rust infection appeared on the stems of Apex only in the southwest and central portions of the Province and throughout the entire project Apex proved to be highly rust resistant. No covered smut was reported but Apex showed more than twice the number of loose smutted heads appearing in any of the other varieties. The loss by shattering to the Apex variety was slightly more than the loss sustained by Regent, Marquis and Thatcher, but it showed decidedly less loss than Rival and somewhat less than Renown.

Marquis.—Over the entire project the yield of Marquis averaged 24.5 bushels per acre. Taking the tests as a whole it was exceeded in yielding ability by all varieties by the following differences: Apex .3 bushel; Renown .5 bushel; Rival 1.1 bushels; Regent 1.3 bushels and Thatcher 3.6 bushels. The manner in which the new varieties have transcended the standard variety in yielding ability is vividly illustrated in Table No. 2 where it will be seen that in only five zones has Marquis equalled or exceeded any of the other varieties in yield. Only in one zone did Marquis yield significantly more than any of the other varieties. This was in zone 2C (in the southwest) where the actual difference between the standard variety and Renown exceeded the necessary difference for the zone. Requiring an average of 105.1 days to reach maturity Marquis was later than the other varieties by the following differences: Rival 1 day; Apex 1.1 days; Regent 1.7 days; Thatcher and Renown 2 days. Only in one zone was Marquis earlier than any of the other varieties; this was in zone 2C where Rival required 1.7 more days to reach maturity. While variations in the comparative heights of the varieties occurred in the different zones generally with the exception of Rival which exceeded it in height by an average difference of 1.4 inches, taking the tests as a whole Marquis was taller than the other varieties, the averages for the entire project showing the following differences: Apex .1 inch; Regent .2 inch; Renown .4 inch, and Thatcher 1 inch. The most noticeable difference in height was in the northern zones where moisture conditions were relatively satisfactory and the maturity period from 3 to 4 days longer than the average for the entire project. In straw strength Marquis generally ranked second to Thatcher, equalled Renown, was slightly superior to Regent and Rival and decidedly superior to Apex. In nearly all zones Renown weighed slightly more than Marquis, the exception being in Zone 1A. In this zone Marquis exceeded Renown in bushel weight by 1.3 lbs. Weighing 61.5 lbs. per measured bushel over the whole project, Marquis was exceeded in weight by Renown by .2 lb. It outweighed the other varieties in nearly all zones. Taking the tests as a whole it exceeded these varieties

by the following differences: Apex .2 lb.; Rival .6 lb.; Thatcher 1 lb., and Regent 1.9 lbs. The commercial grades placed on the Marquis variety are shown as follows: 1 Hard, 32.9%; 1 Nor., 24.3%; 2 Nor., 16.9%; 3 Nor., 14.9%; 4 Nor., 4.7%; No. 5, 1%; No. 6, .2%; 4 Spec., 3.8%; 5 Spec., .9%; Rej. 2, .2%; Sample, .2%. With the exception of zone 2D where no rust infection was reported, stem rust appeared on the Marquis variety in all zones. In the northeast (zones 3D and 4A) the percentage of infection shown was from 2%—50% and over the whole project, the Marquis variety showed an average infection of 4.1%. No covered smut was reported. The number of loose smutted heads appearing on Marquis was less than 50% of the number showing in Apex, approximately equal to the number in Renown but Marquis showed decidedly more smutted heads than the other varieties. Marquis sustained slightly more loss by shattering than Thatcher or Regent, slightly less than Apex, somewhat less than Renown, and decidedly less than Rival.

Regent.—Taking the project as a whole Regent averaged 25.8 bushels per acre. It ranked second to Thatcher in yielding ability, the difference between these two varieties being 2.3 bushels. Regent outyielded the other varieties by the following differences: Rival .2 bus.; Renown .8 bus.; Apex 1 bushel and Marquis 1.3 bushels. In the following zones Regent yielded significantly more than the varieties mentioned: 1A, Rival, Renown and Marquis; 1B, Apex, Renown, Marquis and Rival; 2A, Renown and Marquis; 2B, Apex; 3C, Apex and Marquis; 3D, Marquis; 3E, Renown, Marquis and Apex. The average number of days from sowing to ripening was 103.4. Regent was earlier than Apex, Rival and Marquis by differences of .6 day, .7 day and 1.7 days respectively but was .3 day later than Renown or Thatcher. Regent exhibited its best height in zones 2A, 3D and 3E. In zone 2A it was 1.2 inches shorter than Rival but was from .2 inch to 1.8 inches taller than the other varieties. In zone 3D, with the exception of Rival, it exceeded all varieties and in zone 3E, while it was slightly shorter than Marquis and nearly two inches shorter than Rival, it was taller than the other varieties by differences of from .3 inch to 1.1 inches. Over the entire project, its average height was 34.6 inches. It was taller than Renown and Thatcher by .2 inch and .8 inch respectively but was exceeded in height by the other varieties by the following differences: Apex, .1 inch; Marquis, .2 inch; and Rival, 1.6 inches. In straw strength it was somewhat superior to Apex but slightly inferior to the other varieties. Over the whole project Regent showed an average bushel weight of 59.6 lbs. and was exceeded in weight by the other varieties in all zones. Generally, taking the tests as a whole, Regent was outweighed by the other varieties by the following differences: Thatcher .9 lb.; Rival 1.3 lbs.; Apex 1.7 lbs.; Marquis 1.9 lbs., and Renown 2.1 lbs. The commercial grades placed on the Regent variety are shown as follows: 1 Hard, 14.5%; 1 Nor., 24.9%; 2 Nor., 26.5%; 3 Nor., 14.2%; 4 Nor., 7.2%; No. 5, 3.8 %; No. 6, .4%; Feed 1.8%; 4 Spec., 2.2%; 5 Spec., 2.8%; 6 Spec., 1.3%; Rej. 2, .2%; Sample, .2%. The amount of rust infection appearing on the Regent variety was of a very light nature. It showed decidedly less infection than Marquis and proved to be highly rust resistant. No covered smut was recorded. Only a few loose smutted heads were in evidence, approximately equal to the number appearing on Thatcher, slightly less than Rival and considerably less than the other varieties. Regent showed considerably less loss by shattering than Rival and somewhat less loss than the other varieties.

Renown.—An average of all tests showed the yield of Renown to be 25 bushels per acre. Over the entire project it was outyielded by Rival, Regent, and Thatcher by differences of .6 bushel, .8 bushel, and 3.1 bushels respectively but yielded .2 bushel more than Apex and .5 bushel more than Marquis. Only in the following zones, however, did Renown yield significantly more than the varieties mentioned: Zone 3A, Marquis and Apex; 3C, Marquis and Apex; and 3E, Apex. Requiring 103.1 days to reach maturity it was equal to Thatcher in "earliness," ripening earlier than the other varieties by the following differences: Regent .3 day; Apex .9 day; Rival 1 day and Marquis 2 days. Some slight variation occurred between comparative heights in the different zones but over the whole project Renown averaged 34.4 inches in height, being .6 inch taller than Thatcher but shorter than the other varieties by the following differences: Regent .2 inch; Apex .3 inch; Marquis .4 inch and Rival 1.8 inches. Marked variation occurred between the comparative straw strengths of the different varieties in the southern and central areas but in the north Renown appeared to be either equal or superior to all other varieties in this characteristic. Generally a comparison of all tests shows Renown to be slightly inferior to Thatcher in straw strength, equal to Marquis, slightly superior to Rival and Regent and

decidedly superior to Apex. Over the entire project Renown showed an average bushel weight of 61.7 lbs. With the exception of zones 1A and 1B Renown exceeded the other varieties in weight in all zones. In zone 1A it was slightly outweighed by both Rival and Apex and exceeded in bushel weight by Marquis by a difference of 1.3 lbs. In zone 1B it was equalled in bushel weight by Apex. An average comparison shows that Renown exceeded the other varieties in weight by the following differences: Marquis .2 lb.; Apex .4 lb.; Rival .8 lb.; Thatcher 1.2 lbs.; and Regent 2.1 lbs. The average grades placed on the Renown variety are shown as follows: 1 Hard, 37.8%; 1 Nor., 27.7%; 2 Nor., 17.1%; 3 Nor., 7.5%; 4 Nor., 4.6%; No. 6, .2%; 4 Spec., 4.2%; 5 Spec., .5%; Rej. 2, .2%; Sample, .2%. Generally Renown proved to be highly rust resistant. No covered smut was reported. Renown showed approximately the same number of loose smutted heads as Marquis, approximately half the number appearing in Apex but showed decidedly more smutted heads than the other varieties. Renown suffered slightly more loss by shattering than Apex and decidedly less than Rival. It showed slightly more loss, however, than the other varieties.

Rival.—Over the whole project Rival showed an average yield of 25.6 bushels per acre. It was outyielded by Regent and Thatcher by .2 bushel and 2.5 bushels respectively but yielded more than the other varieties by the following differences: Renown .6 bushel; Apex .8 bushel, and Marquis 1.1 bushels. In the following zones Rival outyielded the varieties mentioned by differences which equalled or exceeded the necessary difference for the zone: 2A, Apex, Marquis and Renown; 2B, Apex; 2D, Marquis, Renown, Regent and Apex; 3A, Regent, Apex and Marquis; 3C, Marquis; 3D, Regent, Renown, Apex and Marquis; 3E, Apex; 4B, Renown and Marquis. Some variation occurred between the comparative earliness of Rival and Apex in the different zones. Generally, however, Rival required, over the whole test, an average of 104.1 days to reach maturity, was one day earlier than Marquis but later than the other varieties by the following differences: Apex .1 day; Regent .7 day; Thatcher and Renown 1 day. Only in one zone was Rival exceeded in height by any of the other varieties. This was in zone 2C where Apex and Renown were slightly taller. Over the whole test Rival showed an average height of 36.2 inches, exceeding the other varieties by the following differences: Marquis 1.4 inches; Apex 1.5 inches; Regent 1.6 inches; Renown 1.8 inches, and Thatcher 2.4 inches. In straw strength, Rival was inferior to Marquis in nearly all zones. It showed marked superiority to Renown in this characteristic in zone 2C but was decidedly inferior to Renown in zones 3E and 4A. Over the entire project it appeared to be slightly inferior in straw strength to Renown. In zone 1B, Rival equalled Apex in strength of straw and was inferior to Apex in zone 4A. In all other zones, however, it was superior to Apex by from slight to marked differences. Rival was decidedly inferior in straw strength to Regent in zone 4A and slightly inferior in zones 2A, 3A, 3C and 3E, but was superior in this characteristic to Regent in the other zones. Over the entire project it showed a slight superiority in straw strength to Regent. When compared to Thatcher it showed slightly stronger straw in zone 1A and was somewhat superior in zone 2C, equalled Thatcher in this characteristic in zone 1B but was inferior in straw strength to this variety in all other zones. Over the whole project the average weight of the Rival variety was shown as 60.9 lbs. per measured bushel. In zone 1A, Rival outweighed Renown by a difference of .2 lb., but in all other zones Rival was exceeded by Renown in bushel weight. In all zones Rival was outweighed by the Marquis and Apex varieties. With the exception of zones 2C, 3B, 3D and 4B where Thatcher weighed slightly more than Rival, the latter variety exceeded Thatcher in bushel weight and in all zones Rival outweighed Regent. Taking the project as a whole, Rival was exceeded in bushel weight by Apex, Marquis and Renown by differences of .4 lb., .6 lb., and .8 lb., respectively but weighed .4 lb. more than Thatcher and 1.3 lbs. more than Regent. The average commercial grades placed on the Rival variety are shown as follows: 1 Hard, 27.9%; 1 Nor., 25.2%; 2 Nor., 21.9%; 3 Nor., 14.1%; 4 Nor., 4.5%; No. 5, .5%; No. 6, .2%; Feed, .6%; 4 Spec., 2.6%; 5 Spec., 1.3%; 6 Spec., .7%; Rej. 3 Nor., .2%; Sample, .3%. Only a light percentage of rust infection appeared on the stems of the Rival variety but the infection appeared to be somewhat more than that appearing on the other resistant varieties. The percentage of infection, however, was considerably less than the infection on the Marquis variety. Generally in this project Rival appeared to be highly rust-resistant. No covered smut was reported. Rival showed slightly more loose smutted heads than Thatcher or Regent but less than Marquis or Renown and decidedly less than Apex. The loss by shattering sustained by this variety was decidedly more than the loss reported in the other varieties.

Thatcher.—Thatcher produced an average yield of 28.1 bushels per acre and over the entire project outyielded the other varieties by the following differences: Regent 2.3 bushels; Rival 2.5 bushels; Renown 3.1 bushels; Apex 3.3 bushels and Marquis 3.6 bushels. Only in four zones was Thatcher equalled or exceeded in yield by any of the other varieties. These zones were 2A, 2C, 3D, and 4B. In Zone 2A, Rival exceeded Thatcher by .4 bushel, a difference which failed to equal the necessary difference for the zone. In zone 2C, Thatcher was exceeded in yield by Marquis by .5 bushel but here again the difference failed to equal the necessary difference. In 3D, Rival outyielded Thatcher by a difference of only .1 bushel and in 4B, Rival equalled Thatcher in yielding ability. The marked superiority of Thatcher in yield is shown by the fact that in zones 1A, 1B, 2B, 2D, 3A, 3B, 3C, 3E and 4A Thatcher yielded significantly more than any of the other varieties. In zone 2A Thatcher outyielded Apex by a difference which equalled the necessary difference for the zone and yielded significantly more than Renown or Marquis. In zone 2C, Thatcher outyielded Renown by a difference which equalled the necessary difference. In zone 3D, Rival outyielded Thatcher by a slight difference of .1 bushel but Thatcher significantly outyielded the other varieties. In zone 4B, Rival equalled Thatcher in yielding ability, and the actual difference between Thatcher and Regent or Apex failed to equal the necessary difference for the zone but Thatcher significantly outyielded Marquis and Renown. With the exception of zone 2C where Thatcher ripened approximately 1.5 days earlier, the differences in "earliness" between the Thatcher and Renown varieties in the different zones were not of a marked nature and taking the project as a whole Thatcher and Renown were equal in their maturity periods, ripening earlier than the other varieties by the following differences: Regent .3 day; Apex .9 day; Rival 1 day; and Marquis 2 days. The greatest varietal differences for earliness were in zone 2C, where Thatcher ripened 5.2 days earlier than Rival and in zones 4A and 4B where Thatcher exceeded Marquis by 3.4 days. Averaging 33.8 inches in height, Thatcher was the shortest variety in the project. In all zones it was exceeded in height by the other varieties and generally, taking the tests as a whole, it was shorter than the other varieties by the following differences: Renown .6 inch; Regent .8 inch; Apex .9 inch; Marquis 1 inch; and Rival 2.4 inches. In straw strength Thatcher was equalled or exceeded by some of the varieties in many zones but generally over the entire project it excelled in this characteristic, being slightly superior to Marquis and Renown, somewhat superior to Regent and Rival and decidedly superior to Apex. Thatcher showed an average bushel weight over the entire project of 60.5 lbs. In a few zones slight variations occurred in the comparative bushel weights but generally Thatcher was second only to Regent in showing the lowest weight. Over the entire project it outweighted Regent by .9 lb. but was exceeded in weight by the other varieties by the following differences: Rival .4 lb.; Apex .8 lb.; Marquis 1 lb.; and Renown 1.2 lbs. The commercial grades placed on the Thatcher variety are shown as follows: 1 Hard, 23.6%; 1 Nor., 24.3%; 2 Nor., 26.7%; 3 Nor., 12.8%; 4 Nor., 4.9%; No. 5, .6%; Feed, .2%; 4 Spec., 4.0%; 5 Spec., .9%; 6 Spec., 1.6%; Rej. 3, .2%; Sample, .2%. The percentage of rust infection appearing on the stems of Thatcher was only of a very light nature. It showed decidedly less infection than Marquis and proved to be highly rust-resistant. No covered smut was reported and only a very few loose smutted heads were in evidence. The loss by shattering to the Thatcher variety was slightly more than the loss sustained by Regent but considerably less than the loss sustained by Rival and slightly less than the other varieties.

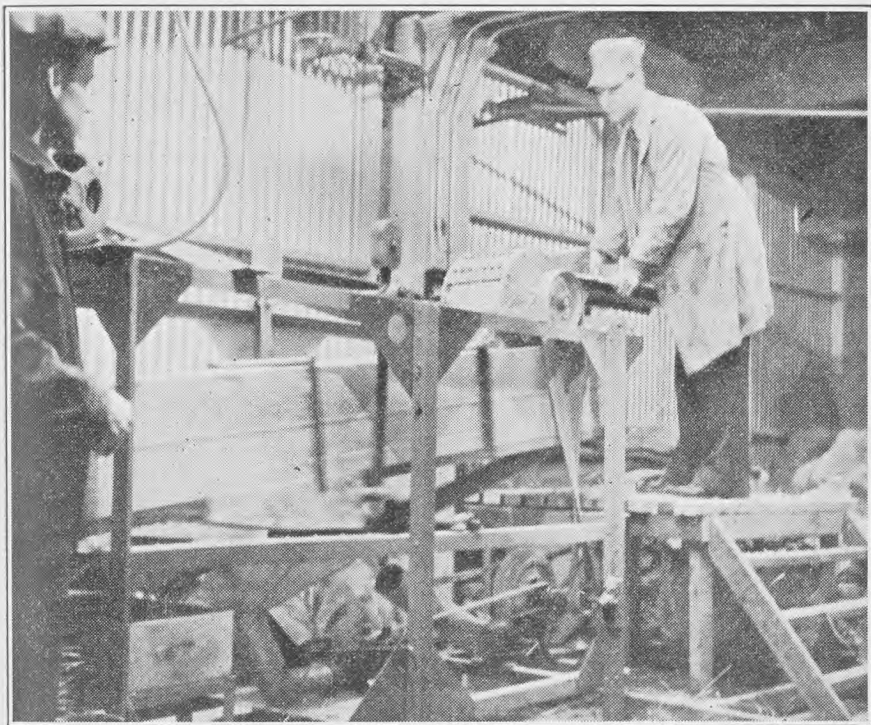
EXPLANATION OF COMMERCIAL GRADES

The commercial grade of a variety of wheat is determined by many factors. The most important factor, of course, is the weight per measured bushel. Sometimes, however, features such as green, shrunken or bleached kernels will lower the grade regardless of bushel weight. These features must be taken into consideration when studying the individual summarized results. In this report it is impossible to show the exact extent to which the defects have reduced the grade of any variety but included in the individual summarized results, under the heading of "Grading remarks," enough information is given to make the defects easily recognizable.

The following abbreviations have been used to indicate the various defects:

V g.—Very green; G.—Green; S g.—Some green; S sh.—Some shrunken; Sh.—Shrunken; B sh.—Badly shrunken; S i.—Some immature; I.—Immature; Bl.—Bleached; S bl.—Some bleached; B bl.—Badly bleached; S st.

—Some starchy; St.—Starchy; V st.—Very starchy; S sp.—Some sprouted; Sp.—Sprouted; B sp.—Badly sprouted; P.—Pink; S. p.—Some pink; L w.—Light weight; B p.—Black point; S b p.—Some black point; H.—Heated; Mxd. h.—Mixed heated; B h.—Badly heated; F.—Frosted; L f.—Lightly frosted; S f.—Some frosted.



Threshing the Sheaves at the Head Office of the Saskatchewan Wheat Pool in Regina.

INDIVIDUAL RESULTS

Table No. 23 shows the individual results obtained by each Co-operator arranged by Wheat Pool Districts. A careful perusal of this table will allow a co-operator to study his results with those of his fellow co-operators. Thus, co-operator William Stan of Dysart, whose test designation is "A" of Sub-district 2, District 9 in Cereal Variety Zone 3A, finds that Thatcher yielded at the rate of 7 bushels per acre more than Marquis. The necessary difference in yield in his test is 2.2 bushels. Thus, as 7 bushels is more than 2.2 bushels, Thatcher yielded, under the conditions of the test, and irrespective of soil variability, significantly more than Marquis. After examining in this way the results of his own test, William Stan turns to the other test in his sub-district, namely John Lung of Southey, and finds here also that Thatcher outyielded Marquis significantly. An examination of the results throughout the table will reveal the fact that the varieties do not retain similar relationships in the different areas of the province, in fact, sometimes not even in tests which are relatively close together. Differences of this nature may be due to several causes, the most important being differences in soil, in local weather conditions, or in the date of sowing. A few days' differences in seeding dates in the same field may give an appreciable difference in results. However, each individual test gives an accurate indication of the comparative performance of the varieties under the conditions existing on the farm where the test was made for the year 1939.

TABLE No. 23

Individual Summarized Results of All Tests—In Wheat Pool Districts

WHEAT POOL DISTRICT 1

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
WALTER HAROLD JOHNSON, GAINSBOROUGH											
3A	1	1	A	Marquis.....	21	39	99	8	59	2	L w.
..	Thatcher.....	29	36	97	9	61	1	Bl. Sh.
..	Apex.....	25	37	97	9	61	1	S g.
..	Renown.....	23	36	95	9	61.5	1	L w.
..	Regent.....	24	37	95	9	59	2	Sh. G.
..	Rival.....	27	38	94	9	62.5	1	S g.
Necessary difference—2.9 bushels.											
SYDNEY GLEN S. DOUGLAS, CARNDUFF											
2A	1	1	B	Marquis.....	6	32	93	8.2	54	4 Spec.	Bl. Sh.
..	Thatcher.....	10	30	87	8.6	56	4	Bl. Sh.
..	Apex.....	10	31	92	8.3	56	4	Bl. Sh.
..	Renown.....	6	29	92	8.3	56	4	Bl. Sh.
..	Regent.....	9	31	91	7.3	53.5	5	Bl. Sh. G.
..	Rival.....	12	33	93	8.3	56.5	4	Bl. Sh.
Necessary difference—2.0 bushels.											
ALEXANDER GERVAIS, ALIDA											
3A	1	2	A	Marquis.....	10	31	93	9	60	1	Sh.
..	Thatcher.....	10	30	90	9.1	58	2	L w.
..	Apex.....	7	30	95	8.8	60.5	1	Sh.
..	Renown.....	11	30	91	9	61.5	1	S sh.
..	Regent.....	9	32	94	8.7	56	4	L w.
..	Rival.....	13	31	92	9	60	1	S bl.
No significant yield difference between varieties.											
RUSSEL YATES, STORTHOAKS											
3A	1	2	B	Marquis.....	9	15	....	....	58	2	Sh. G.
..	Thatcher.....	15	15	....	....	59	2	S bl. Sh.
..	Apex.....	15	15	....	....	60	1	Sh.
..	Renown.....	15	15	....	....	60	1	....
..	Regent.....	14	15	....	....	56	4	B sh.
..	Rival.....	16	15	....	....	58.5	2	L w.
Necessary difference—3.0 bushels.											
KEITH WM. RAE, CARIEVALE											
3A	1	2	C	Marquis.....	14	29	91	....	60.5	3	G.
..	Thatcher.....	12	28	92	....	60	2	Bl. Sh.
..	Apex.....	17	28	92	....	62	1	S g.
..	Renown.....	12	29	91	....	60.5	1	S g.
..	Regent.....	15	28	89	....	58	3	Sh. G.
..	Rival.....	14	30	90	....	61	2	Sh. G.
Necessary difference—2.1 bushels.											
RAYMOND WAYNE BARBER, AUBURNTON											
3A	1	3	A	Marquis.....	8	30	94	6	56.5	4	B sh.
..	Thatcher.....	12	28	94	6	54	4 Spec.	Bl. Sh.
..	Apex.....	11	31	94	6	57.5	3	Sh.
..	Renown.....	9	30	93	6	55	4 Spec.	Bl. Sh.
..	Regent.....	7	36	92	6	52.5	5 Spec.	B sh.
..	Rival.....	11	28	94	6	56	4	Bl. Sh.
No significant yield difference between varieties.											
WILLIAM KEITH LEGGE, WILLMAR											
2A	1	4	A	Marquis.....	9	30	98	4.3	55	4 Spec.	B sh.
..	Thatcher.....	7	26	98	7.3	58	2	Bl. Sh.
..	Apex.....	9	27	97	4	57	3	Sh.
..	Renown.....	7	27	97	7	60.5	1	Sh.
..	Regent.....	7	26	97	4.7	57	3	Sh. G.
..	Rival.....	10	29	98	5	57	3	Sh. G.
No significant yield difference between varieties.											
GORDON M. RICHARDSON, COLGATE											
1A	1	7	B	Marquis.....	10	30	113	9	56	4	B sh.
..	Thatcher.....	13	31	113	10	53	4 Spec.	B sh.
..	Apex.....	13	32	113	10	54	4 Spec.	B sh.
..	Renown.....	11	32	113	8	53.5	4 Spec.	B sh.
..	Regent.....	11	31	113	10	48.5	Fd.	B sh.
..	Rival.....	10	35	113	10	52.5	5 Spec.	B sh.
No significant yield difference between varieties.											
WALTER HOWARD DONNELLY, STOUGHTON											
2A	1	9	B	Marquis.....	5	23	98	10	58	2	Sh.
..	Thatcher.....	3	22	98	10	*	4 E.	....
..	Apex.....	4	21	98	10	57	3	Sh.
..	Renown.....	3	21	98	10	*	4 E.	....
..	Regent.....	5	23	98	10	53	5	Bl. Sh. S g.
..	Rival.....	4	23	98	10	59	2	S sh.
No significant yield difference between varieties.											

* Insufficient to weigh.

E. Estimated.

Wheat Pool District 1—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
KENNETH A. CAMERON, CARLYLE											
3A	1	10	A	Marquis.....	8	29	97	10	54.5	4 Spec.	B sh.
"	"	"	"	Thatcher.....	8	29	94	10	50	6 Spec.	B sh. Bl.
"	"	"	"	Apex.....	7	31	95	10	54.5	4 Spec.	B sh.
"	"	"	"	Renown.....	11	30	95	10	53.5	4 Spec.	B sh.
"	"	"	"	Regent.....	8	30	94	10	48	Fd.	B sh. Bl.
"	"	"	"	Rival.....	8	30	97	10	51	5 Spec.	B sh.

No significant yield difference between varieties.

CLARENCE VICTOR BORRESON, ANTLER											
3A	1	10	B	Marquis.....	12	28	91	7.7	57	4	Sh. G.
"	"	"	"	Thatcher.....	12	27	90	6.7	57.5	4	P. Sh. G.
"	"	"	"	Apex.....	14	27	90	7	57.5	3	Sh. G.
"	"	"	"	Renown.....	14	26	89	7	58.5	3	Sh. G.
"	"	"	"	Regent.....	12	27	90	6.7	53.5	5	B sh. G.
"	"	"	"	Rival.....	15	28	88	8.7	58	3	Sh. G.

No significant yield difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2A	1	3	B	Alexander John Truscott, Alameda.	1A	1	7	A	Wayne E. McAlpine, Oungre
2A	1	5	A	Roger Carlton, Benson	2A	1	8	A	Robert Lytle Collins, McTaggart
2A	1	5	B	Lester Eugene Hursh, Macoun.	2A	1	8	B	Neil V. Fenwick, Griffen.
2A	1	6	A	Albert Miller Manley, Midale.	2A	1	8	C	Douglas W. Barnett, Huntoun.
1A	1	6	B	John Dornian, Outram.	2A	1	9	A	Clarence A. Hookonsen, Kisbey.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 2

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
KENNETH EUGENE TORKELSON, BEAUBIER											
1A	2	1	A	Marquis.....	29	38	106	9.3	60	2	Sh. S g.
"	"	"	"	Thatcher.....	23	36	101	8.7	59	2	Bl. Sh.
"	"	"	"	Apex.....	29	36	103	8.0	59	2	Sh.
"	"	"	"	Renown.....	24	36	101	8.3	61.5	1	Sh.
"	"	"	"	Regent.....	27	37	101	8.0	58.5	2	Sh. S g.
"	"	"	"	Rival.....	26	38	103	8.7	59	2	L w.

Necessary difference—2.9 bushels.

KENNETH C. PARTON, RADVILLE											
1A	2	1	B	Marquis.....	5	18	116	9	56.5	4	B. sh.
"	"	"	"	Thatcher.....	6	18	116	9	55	4 Spec.	Bl. B sh.
"	"	"	"	Apex.....	6	18	116	9	56.5	4	B sh.
"	"	"	"	Renown.....	8	18	116	9	56	4	B sh.
"	"	"	"	Regent.....	6	18	116	9	52.5	5 Spec.	Bl. B sh.
"	"	"	"	Rival.....	5	18	116	9	55.5	4 Spec.	Bl. B sh.

No significant yield difference between varieties.

ANDREW W. MURRAY, HARDY											
1A	2	2	A	Marquis.....	11	25	115	9.3	58	2	Bl. Sh.
"	"	"	"	Thatcher.....	13	25	115	10	56	4	B bl. Sh.
"	"	"	"	Apex.....	11	26	116	10	58	3	Bl. Sh.
"	"	"	"	Renown.....	11	26	110	9.7	57	3	Bl. Sh.
"	"	"	"	Regent.....	13	25	115	10	53.5	4 Spec.	Bl. B sh.
"	"	"	"	Rival.....	13	26	115	10	57.5	3	Bl. Sh.

No significant yield difference between varieties.

JAMES S. TAMES, BUFFALO GAP											
1A	2	3	A	Marquis.....	33	48	108	9.3	59.5	3	Sh. G.
"	"	"	"	Thatcher.....	38	46	106	10	57	3	B sh.
"	"	"	"	Apex.....	30	47	108	7	57.5	3	Sh. G.
"	"	"	"	Renown.....	39	46	107	10	61	2	G.
"	"	"	"	Regent.....	40	47	106	10	57	3	Sh. G.
"	"	"	"	Rival.....	37	49	107	9.7	58	3	Sh. G.

No significant yield difference between varieties.

GEORGE H. DAVIES, CORONACH											
1A	2	3	B	Marquis.....	16	31	105	9.7	60.5	1	L w.
"	"	"	"	Thatcher.....	20	34	103	8.7	59	2	Bl. Sh.
"	"	"	"	Apex.....	14	36	104	9	61	1	Sh.
"	"	"	"	Renown.....	17	32	104	9.7	61.5	1	L w.
"	"	"	"	Regent.....	17	34	104	9.3	59.5	2	Sh.
"	"	"	"	Rival.....	16	34	104	10	61	1	L w.

No significant yield difference between varieties.

Wheat Pool District 2—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
BJARNE R. KLEVEGARD, SCOUT LAKE											
1A	2	4	A	Marquis.....	23	31	100	10	62	1 Hd.	....
"	"	"	"	Thatcher.....	24	31	99	10	60.5	1	Bl. Sh.
"	"	"	"	Apex.....	21	31	100	10	61	1	S bl.
"	"	"	"	Renown.....	22	30	100	10	63.5	1 Hd.	....
"	"	"	"	Regent.....	23	31	100	10	60	1	Bl. Sh.
"	"	"	"	Rival.....	18	31	103	10	61	1	Bl.
Necessary difference—2.1 bushels.											
LEONARD BEAUDRY, ST. VICTOR											
1A	2	4	B	Marquis.....	12	30	....	8.3	59	2	G.
"	"	"	"	Thatcher.....	15	29	....	9.3	58	2	Sh.
"	"	"	"	Apex.....	9	30	....	9.7	59	2	Sh.
"	"	"	"	Renown.....	12	29	....	8.7	58	2	Sh.
"	"	"	"	Regent.....	12	27	....	9.0	56.5	4	Sh. L w.
"	"	"	"	Rival.....	12	29	....	10.0	59	2	Sh.
No significant yield difference between varieties.											
ARTHUR W. DAVEY, LONESOME BUTTE											
1A	2	5	A	Marquis.....	6	21	....	10	60	1	Sh. S g.
"	"	"	"	Thatcher.....	9	25	....	10	57.5	3	Bl. Sh.
"	"	"	"	Apex.....	10	24	....	10	60.5	1	Sh.
"	"	"	"	Renown.....	10	24	....	10	58	2	Sh.
"	"	"	"	Regent.....	10	24	....	10	57.5	3	Sh.
"	"	"	"	Rival.....	12	26	....	10	60	1	Sh.
No significant yield difference between varieties.											
KENNETH H. BARKER, KILLDEER											
1A	2	5	B	Marquis.....	19	33	112	9	63	1 Hd.	....
"	"	"	"	Thatcher.....	23	33	112	9	62	1 Hd.	....
"	"	"	"	Apex.....	19	32	112	9	62	1 Hd.	....
"	"	"	"	Renown.....	21	34	112	9	64	1 Hd.	....
"	"	"	"	Regent.....	19	33	112	9	61	1	Sh.
"	"	"	"	Rival.....	19	33	112	8	64	1 Hd.	....
No significant yield difference between varieties.											
ALBERT KEITH WILSON, LAFLECHE											
1A	2	6	A	Marquis.....	23	38	111	10	61	1	Sh.
"	"	"	"	Thatcher.....	28	42	110	10	59	2	Bl. Sh.
"	"	"	"	Apex.....	24	40	111	9.3	61	1	Bl.
"	"	"	"	Renown.....	23	40	111	10	61.5	1	Sh.
"	"	"	"	Regent.....	21	39	111	10	59	2	Bl. Sh.
"	"	"	"	Rival.....	18	43	113	10	60	2	Bl. Sh.
Necessary difference—3.3 bushels.											
CLARENCE MITCHELL, SISTER BUTTE											
1A	2	6	B	Marquis.....	18	....	....	....	63	1 Hd.	....
"	"	"	"	Thatcher.....	22	....	....	....	62	1 Hd.	....
"	"	"	"	Apex.....	18	....	....	....	62.5	1 Hd.	....
"	"	"	"	Renown.....	19	....	....	....	63.5	1 Hd.	....
"	"	"	"	Regent.....	18	....	....	....	61	1	Sh. L w.
"	"	"	"	Rival.....	20	....	....	....	63	1 Hd.	....
No significant yield difference between varieties.											
EDWARD A. FLYNN, FIR MOUNTAIN											
1A	2	6	C	Marquis.....	18	35	....	9.3	59.5	2	Bl.
"	"	"	"	Thatcher.....	23	35	....	8.7	56.5	4	B bl.
"	"	"	"	Apex.....	20	35	....	6.7	57	3	Bl. L w.
"	"	"	"	Renown.....	18	35	....	9.7	59.5	2	Bl.
"	"	"	"	Regent.....	21	33	....	8.7	57.5	3	Bl. L w.
"	"	"	"	Rival.....	19	35	....	7.0	57	3	Bl.
No significant yield difference between varieties.											
ARTHUR LAWRENCE PEDERSON, CONGRESS											
1A	2	7	A	Marquis.....	26	36	115	10	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	27	32	112	10	62	1 Hd.	....
"	"	"	"	Apex.....	36	36	110	10	62	1 Hd.	....
"	"	"	"	Renown.....	33	35	110	10	63.5	1 Hd.	....
"	"	"	"	Regent.....	31	35	110	10	61.5	1	S bl.
"	"	"	"	Rival.....	25	37	114	10	62	1	S bl.
No significant yield difference between varieties.											
EDWARD JOSEPH KUFFNER, MAXSTONE											
1A	2	7	B	Marquis.....	31	46	....	10	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	30	41	....	10	61.5	1	....
"	"	"	"	Apex.....	29	43	....	10	63	1 Hd.	....
"	"	"	"	Renown.....	29	40	....	10	64	1 Hd.	....
"	"	"	"	Regent.....	32	41	....	10	60.5	2	Sh. G.
"	"	"	"	Rival.....	30	43	....	10	62	1 Hd.	....
No significant yield difference between varieties.											

Wheat Pool District 2—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
HENRY J. C. BROWN, READLYN											
1A	2	8	A	Marquis.....	21	34	111	9.3	65	1 Hd.	....
"	"	"	"	Thatcher.....	24	32	109	10	64	1 Hd.	....
"	"	"	"	Apex.....	25	35	111	9.7	64.5	1 Hd.	....
"	"	"	"	Renown.....	22	34	109	7	65	1 Hd.	....
"	"	"	"	Regent.....	22	34	109	7	64	1 Hd.	....
"	"	"	"	Rival.....	20	35	111	10	64	1 Hd.	....

No significant yield difference between varieties.

WILLIAM H. LOHMEYER, VICEROY											
1A	2	8	B	Marquis.....	....	48	104	7	58	3	Sh. G.
"	"	"	"	Thatcher.....	....	46	104	7.3	53.5	4 Spec.	Sh. Bl.
"	"	"	"	Apex.....	....	45	104	6.7	54.5	4 Spec.	B sh.
"	"	"	"	Renown.....	....	46	104	6.3	56	4	P. Sh.
"	"	"	"	Regent.....	....	47	105	7.6	52	5 Spec.	B sh. P.
"	"	"	"	Rival.....	....	51	104	8	54	4 Spec.	B sh.

Yields rejected. Badly damaged in transit.

MISS JULIANNA LUEBKE, EDGEWORTH											
1A	2	9	A	Marquis.....	17	34	118	9	60.5	3	Sh. G.
"	"	"	"	Thatcher.....	14	34	119	9	59	2	Bl. Sh.
"	"	"	"	Apex.....	13	35	119	9	61	1	L w.
"	"	"	"	Renown.....	14	37	119	9	61.5	1	L w.
"	"	"	"	Regent.....	14	36	119	9	58	2	Sh. G.
"	"	"	"	Rival.....	14	36	118	9	61	1	L w.

No significant yield difference between varieties.

FRANK PARRY, OGEMA											
1A	2	9	B	Marquis.....	5	....	....	....	57.5	3	L w.
"	"	"	"	Thatcher.....	5	....	....	....	53	4 Spec.	Bl. Sh.
"	"	"	"	Apex.....	6	....	....	....	57	3	L w.
"	"	"	"	Renown.....	5	....	....	....	56	4	Sh. G.
"	"	"	"	Regent.....	8	....	....	....	53	4 Spec.	B sh.
"	"	"	"	Rival.....	6	....	....	....	56	4	Bl. Sh.

No significant yield difference between varieties.

WILFRED PINGERT, AMULET											
1A	2	10	A	Marquis.....	25	....	....	....	61.5	1	L w.
"	"	"	"	Thatcher.....	29	....	....	....	62	1 Hd.	....
"	"	"	"	Apex.....	28	....	....	....	61	1	L w.
"	"	"	"	Renown.....	25	....	....	....	63	1 Hd.	....
"	"	"	"	Regent.....	24	....	....	....	61	1	L w.
"	"	"	"	Rival.....	24	....	....	....	63	1 Hd.	....

Necessary difference—2.9 bushels.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1A 2 2 B Frank E. Floer, Minton. 1A 2 10 B Norman Leslie McLeod, Trossachs.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 3

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
BEN GORDON THOMSON, McCORD											
1A	3	1	A	Marquis.....	18	27	107	10	63	1	S bl.
"	"	"	"	Thatcher.....	24	26	103	10	62	1	S bl.
"	"	"	"	Apex.....	18	25	107	10	62	1	S bl.
"	"	"	"	Renown.....	17	26	107	10	63	1	S bl.
"	"	"	"	Regent.....	19	28	105	10	60.5	2	Bl. Sh.
"	"	"	"	Rival.....	21	27	104	10	62	2	Bl. Sh.

No significant yield difference between varieties.

GARTH RANKIN WILKINS, MANKOTA											
1A	3	1	B	Marquis.....	35	41	117	10	65	1	St.
"	"	"	"	Thatcher.....	34	37	112	10	65	1	St.
"	"	"	"	Apex.....	36	41	112	10	65	1 Hd.	....
"	"	"	"	Renown.....	37	40	110	10	66	1 Hd.	....
"	"	"	"	Regent.....	38	41	111	10	64	1	S g.
"	"	"	"	Rival.....	33	42	110	10	65	1 Hd.	....

No significant yield difference between varieties.

Wheat Pool District 3—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
HERMAN HENRY KNEESCH, TREELON											
1A	3	3	A	Marquis.....	14	38	105	10	52.5	6	B sh.
"	"	"	"	Thatcher.....	13	36	103	9	53	4 Spec.	B sh.
"	"	"	"	Apex.....	15	38	103	9	52.5	6	B sh.
"	"	"	"	Renown.....	11	37	103	10	56	4	B sh. G.
"	"	"	"	Regent.....	11	38	103	10	50.5	Feed	B sh.
"	"	"	"	Rival.....	14	39	102	9	50	Feed	B sh.

Necessary difference—1.9 bushels.

MISS ELIZABETH A. BERTRAM, CLIMAX											
1A	3	3	B	Marquis.....	....	48	....	10	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	....	46	....	7	60.5	1	S g. Sh.
"	"	"	"	Apex.....	....	43	....	7	62	1	S g.
"	"	"	"	Renown.....	....	47	....	8	63	1	S g.
"	"	"	"	Regent.....	....	46	....	9	60	1	Sh. S g.
"	"	"	"	Rival.....	....	51	....	10	62	1	S g.

Yields rejected. Badly damaged in transit.

HAROLD HANSON, ROBSART											
1A	3	5	A	Marquis.....	....	....	122	7.7	*	2 E.	Bl.
"	"	"	"	Thatcher.....	....	....	125	8.7	58	2	Bl.
"	"	"	"	Apex.....	....	....	127	5.7	*	2 E.	Sh. Bl.
"	"	"	"	Renown.....	....	....	128	3	....	....	....
"	"	"	"	Regent.....	....	....	128	3	*	2 E.	Sh. Bl.
"	"	"	"	Rival.....	....	....	130	8.7	60	2	Bl.

Badly damaged by gophers. Yields discarded.

WALTER CLARENCE TILLIER, ROBSART											
1A	3	5	B	Marquis.....	8	23	97	10	58	3	B bl. Sh.
"	"	"	"	Thatcher.....	10	23	97	10	56	4	B bl. L w.
"	"	"	"	Apex.....	9	23	97	10	57.5	3	B bl.
"	"	"	"	Renown.....	7	23	97	10	57.5	3	B bl.
"	"	"	"	Regent.....	9	23	97	10	54.5	5	B bl. L w.
"	"	"	"	Rival.....	8	23	97	10	57	3	B bl.

No significant yield difference between varieties.

EDMUND McINTYRE, EASTEND											
1A	3	6	A	Marquis.....	34	....	....	....	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	31	....	....	....	61.5	1	Bl.
"	"	"	"	Apex.....	29	....	....	....	63	1 Hd.	....
"	"	"	"	Renown.....	26	....	....	....	64	1 Hd.	....
"	"	"	"	Regent.....	30	....	....	....	61.5	1	S bl.
"	"	"	"	Rival.....	27	....	....	....	61.5	1	S bl.

No significant yield difference between varieties.

THOMAS A. BIRCHAM, KEALEY SPRINGS											
2C	3	6	B	Marquis.....	16	31	122	9	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	18	30	114	9.7	62.5	1 Hd.	....
"	"	"	"	Apex.....	16	30	114	7	63.5	1 Hd.	....
"	"	"	"	Renown.....	14	29	114	8	64	1 Hd.	....
"	"	"	"	Regent.....	15	32	120	8	62.5	1 Hd.	....
"	"	"	"	Rival.....	16	31	120	10	62.5	1 Hd.	....

No significant yield difference between varieties.

DONALD A. MEINERT, INSTOW											
2C	3	8	A	Marquis.....	27	37	....	9.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	27	34	....	8.7	63	1 Hd.	....
"	"	"	"	Apex.....	28	37	....	8.7	62	1 Hd.	....
"	"	"	"	Renown.....	23	34	....	9.7	64.5	1 Hd.	....
"	"	"	"	Regent.....	28	35	....	9.7	61.5	1	L w.
"	"	"	"	Rival.....	25	37	....	9.2	62.5	1 Hd.	....

Necessary difference—2.3 bushels.

CLARENCE G. NELSON, INSTOW											
2C	3	8	B	Marquis.....	20	33	....	....	63	1	S sh.
"	"	"	"	Thatcher.....	18	36	....	....	62	2	Bl.
"	"	"	"	Apex.....	17	35	....	....	62.5	1	S bl.
"	"	"	"	Renown.....	15	36	....	....	63	1	S bl.
"	"	"	"	Regent.....	16	27	....	....	61	2	Bl. G.
"	"	"	"	Rival.....	19	30	....	....	61.5	2	Bl.

No significant yield difference between varieties.

ALBERT JOHN THOMPSON, ADMIRAL											
1A	3	9	A	Marquis.....	33	....	....	....	60	2	G.
"	"	"	"	Thatcher.....	35	....	....	....	55.5	4 Spec.	B sh. Bl.
"	"	"	"	Apex.....	31	....	....	....	59	3	Sh. G.
"	"	"	"	Renown.....	37	....	....	....	60.5	1	S g.
"	"	"	"	Regent.....	35	....	....	....	57.5	4	Sh. V g.
"	"	"	"	Rival.....	29	....	....	....	56.5	4	B sh. G.

No significant yield difference between varieties.

* Insufficient to weigh.

E. Estimated.

Wheat Pool District 3—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
GEORGE SKARR, BEAVER VALLEY											
1A	3	9	B	Marquis.....	36	112	9.7	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	35	105	9.0	63	1 Hd.	....
"	"	"	"	Apex.....	35	112	9.7	63.5	1 Hd.	....
"	"	"	"	Renown.....	34	110	9.7	63	1 Hd.	....
"	"	"	"	Regent.....	33	107	9.7	62	1	S g.	
"	"	"	"	Rival.....	38	115	10.0	62	1	S bl.	
Yields discarded. Damaged by pests.											

ELDON F. KNOX, WALLARD											
1A	3	10	A	Marquis.....	17	23	114	8.3	63	1	S bl.
"	"	"	"	Thatcher.....	21	21	114	8.3	62	1	S bl.
"	"	"	"	Apex.....	17	22	119	9.3	62.5	1	S bl.
"	"	"	"	Renown.....	15	19	115	8.3	63.5	1	S bl.
"	"	"	"	Regent.....	17	24	115	8.3	60.5	2	Bl. Sh.
"	"	"	"	Rival.....	18	22	114	8.7	62	2	Bl. Sh.
No significant yield difference between varieties.											

ELMER L. DOUVILLE, GOUVERNEUR											
1A	3	10	B	Marquis.....	16	....	....	....	61.5	1 Hd.	....
"	"	"	"	Thatcher.....	20	....	....	....	60	1	Sh. Bl.
"	"	"	"	Apex.....	15	....	....	....	61.5	1	S g.
"	"	"	"	Renown.....	21	....	....	....	63	1 Hd.	....
"	"	"	"	Regent.....	18	....	....	....	61	1	S bl.
"	"	"	"	Rival.....	19	....	....	....	61.5	1	S g.
Necessary difference—Samples incomplete.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1A	3	4	A	Walter W. Hyam, Claydon.	1A	3	7	A	George Keturakis, Shaunavon.
1A	3	4	B	John Korsberg, Loomis.	1A	3	7	B	Wilbert H. Lewis, Eastend.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 4

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
DANIEL HECKER, PIAPOT											
1B	4	1	A	Marquis.....	32	35	104	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	41	35	104	10	65	1 Hd.	....
"	"	"	"	Apex.....	31	36	104	9.7	65.5	1 Hd.	....
"	"	"	"	Renown.....	36	39	101	8	65.5	1 Hd.	....
"	"	"	"	Regent.....	37	37	103	9.3	65	1 Hd.	....
"	"	"	"	Rival.....	37	41	102	9	64.5	1 Hd.	....
No significant yield difference between varieties.											

GEORGE ECCLESTON, EDGELL											
2C	4	1	B	Marquis.....	39	37	....	....	65	1 Hd.	....
"	"	"	"	Thatcher.....	32	34	....	....	64	1 Hd.	....
"	"	"	"	Apex.....	34	35	....	....	64	1 Hd.	....
"	"	"	"	Renown.....	32	36	....	....	64.5	1 Hd.	....
"	"	"	"	Regent.....	34	36	....	....	63.5	1 Hd.	....
"	"	"	"	Rival.....	37	35	....	....	64.5	1 Hd.	....
No significant yield difference between varieties.											

EDWARD WHITE, MAPLE CREEK											
1B	4	2	A	Marquis.....	21	30	104	10	61.5	1	S sh.
"	"	"	"	Thatcher.....	27	30	103	10	59.5	2	Sh.
"	"	"	"	Apex.....	22	31	103	10	61	1	Sh.
"	"	"	"	Renown.....	22	32	103	10	63	1 Hd.	....
"	"	"	"	Regent.....	24	32	103	10	59	2	Sh.
"	"	"	"	Rival.....	24	32	103	10	62	1	S st.
No significant yield difference between varieties.											

MIKE HAWRYLAK, MAPLE CREEK											
1B	4	2	B	Marquis.....	18	30	84	10	61.5	1	Sh.
"	"	"	"	Thatcher.....	17	28	84	10	60	1	Sh.
"	"	"	"	Apex.....	17	31	84	10	60.5	1	Sh.
"	"	"	"	Renown.....	17	29	84	10	61	1	Sh.
"	"	"	"	Regent.....	16	28	84	10	58.5	2	B sh.
"	"	"	"	Rival.....	21	33	84	10	61.5	1	....
No significant yield difference between varieties.											

Wheat Pool District 4—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
RALPH S. THISTLETHWAITE, STEWART VALLEY											
1B	4	3	A	Marquis.....	17	28	111	8	60.5	1	S g.
..	Thatcher.....	17	28	107	8.7	60.5	1	Sh.
..	Apex.....	18	30	107	7.7	61.5	1	L w.
..	Renown.....	17	29	109	8	63	1 Hd.	..
..	Regent.....	16	29	108	7.7	59	2	Sh.
..	Rival.....	17	30	106	9	61.5	1	S g.
No significant yield difference between varieties.											

OWEN ROGER MALCHOW, CANTUAR											
1B	4	3	B	Marquis.....	22	37	99	10	61	1	L w.
..	..	..	..	Thatcher.....	29	33	94	10	62	1 Hd.	..
..	..	..	..	Apex.....	27	34	99	10	61.5	1	L w.
..	..	..	..	Renown.....	28	33	98	10	63.5	1 Hd.	..
..	..	..	..	Regent.....	26	33	98	10	62	1	S g.
..	..	..	..	Rival.....	26	37	99	10	62.5	1 Hd.	..
No significant yield difference between varieties.											

FLOY TUTTLE, BEVERLEY											
2C	4	3	C	Marquis.....	..	41	109	8.3	64.5	1 Hd.	..
..	..	..	..	Thatcher.....	..	39	110	8.3	64	1 Hd.	..
..	..	..	..	Apex.....	..	42	111	5.7	64.5	1 Hd.	..
..	..	..	..	Renown.....	..	40	112	8	65	1 Hd.	..
..	..	..	..	Regent.....	..	39	111	8	63.5	1	S g.
..	..	..	..	Rival.....	..	41	112	9	63	1 Hd.	..
Yields rejected. Samples badly damaged in transit.											

WM. MITCHELL RUDOLPH, GULL LAKE											
2C	4	4	A	Marquis.....	..	32	112	10	64	1 Hd.	..
..	..	..	..	Thatcher.....	..	30	109	9.3	63	1 Hd.	..
..	..	..	..	Apex.....	..	32	110	10	64.5	1 Hd.	..
..	..	..	..	Renown.....	..	31	115	8.7	63.5	1 Hd.	..
..	..	..	..	Regent.....	..	30	112	9	63	1 Hd.	..
..	..	..	..	Rival.....	..	32	117	9.7	63	1 Hd.	..
Yields rejected. Samples badly damaged in transit.											

L. EDWIN HAYES, ILLERBRUN											
2C	4	4	B	Marquis.....	26	31	103	10	63	1 Hd.	..
..	..	..	..	Thatcher.....	26	31	103	10	62.5	1 Hd.	..
..	..	..	..	Apex.....	24	31	105	10	62.5	1 Hd.	..
..	..	..	..	Renown.....	26	31	101	10	64	1 Hd.	..
..	..	..	..	Regent.....	25	32	106	10	62	1 Hd.	Bl. S g.
..	..	..	..	Rival.....	25	32	111	10	63	1 Hd.	Bl. S g.
No significant yield difference between varieties.											

MILBURN J. TREMBATH, CABRI											
1B	4	5	A	Marquis.....	26	34	99	9.7	62.5	1 Hd.	..
..	..	..	..	Thatcher.....	31	33	95	9	62.5	1 Hd.	..
..	..	..	..	Apex.....	29	34	97	10	63	1 Hd.	..
..	..	..	..	Renown.....	27	34	95	10	64	1 Hd.	..
..	..	..	..	Regent.....	29	31	94	9.7	62	1 Hd.	..
..	..	..	..	Rival.....	27	35	97	9	63	1 Hd.	..
Necessary difference—2.2 bushels.											

WALTER GEORGE BOWDITCH, SUCCESS											
1B	4	5	B	Marquis.....	28	31	111	9	62.5	1 Hd.	..
..	..	..	..	Thatcher.....	28	28	111	9.3	62	1	S bl.
..	..	..	..	Apex.....	29	29	111	9.3	62.5	1 Hd.	..
..	..	..	..	Renown.....	27	28	110	9.7	63	1 Hd.	..
..	..	..	..	Regent.....	28	28	111	8.3	61	1	Bl. Sh.
..	..	..	..	Rival.....	25	30	111	8.7	62	1	S bl.
No significant yield difference between varieties.											

CHARLES DUNCAN AHLBERG, GOLDEN PRAIRIE											
1B	4	6	A	Marquis.....	23	..	..	..	57	3	B sh.
..	..	..	..	Thatcher.....	22	..	..	..	55	5	B sh.
..	..	..	..	Apex.....	22	..	..	..	57	3	B sh.
..	..	..	..	Renown.....	22	..	..	..	57	3	Sh. G.
..	..	..	..	Regent.....	26	..	..	..	55.5	5	Sh. G.
..	..	..	..	Rival.....	20	..	..	..	55	5	B sh. G.
No significant yield difference between varieties.											

ALEX STUCKEY GOLD, MAPLE CREEK											
1B	4	6	B	Marquis.....	..	..	..	9	..	..	..
..	..	..	..	Thatcher.....	..	..	..	9	..	..	..
..	..	..	..	Apex.....	..	..	..	9	..	..	..
..	..	..	..	Renown.....	..	..	..	9	..	..	..
..	..	..	..	Regent.....	..	..	..	9	..	..	..
..	..	..	..	Rival.....	..	..	..	9	..	..	..
No yields received. Destroyed by pests.											

Wheat Pool District 4—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ALBERT HAROLD PATRIC PREBOY, FOX VALLEY											
1B	4	7	A	Marquis.....	8	26	90	9	52.5	5 Spec.	Sh. G.
"	"	"	"	Thatcher.....	11	29	88	9.3	51.5	5 Spec.	B sh. S bl.
"	"	"	"	Apex.....	10	29	89	9.7	53.5	4 Spec.	B sh. S p.
"	"	"	"	Renown.....	11	31	88	8.7	52	5 Spec.	B sh. S p.
"	"	"	"	Regent.....	10	31	91	9	48	Feed	B sh. S p.
"	"	"	"	Rival.....	10	31	91	8.3	52	5 Spec.	B sh. S bl.

No significant yield difference between varieties.

JOHN M. HILSENDEGER, RICHMOUND											
1B	4	7	B	Marquis.....	34	42	....	10	60	1	Sh.
"	"	"	"	Thatcher.....	35	40	....	10	59	2	L w.
"	"	"	"	Apex.....	32	40	....	10	59.5	2	L w.
"	"	"	"	Renown.....	30	40	....	10	60	2	Sh. G.
"	"	"	"	Regent.....	33	41	....	10	59	2	Sh. G.
"	"	"	"	Rival.....	31	41	....	10	60.5	1	Sh.

No significant yield difference between varieties.

PAUL TILLEMANN, HORSHAM											
1B	4	7	C	Marquis.....	11	20	109	8.7	53	5	S bl. B sh
"	"	"	"	Thatcher.....	12	20	104	8.3	50	Feed	Bl. B sh.
"	"	"	"	Apex.....	11	21	109	9	52	6	Bl. B sh.
"	"	"	"	Renown.....	11	20	109	8.3	51	6	B sh.
"	"	"	"	Regent.....	11	20	109	8.3	47.5	Feed	Bl. B sh.
"	"	"	"	Rival.....	11	21	109	8.3	52	6	B sh.

No significant yield difference between varieties.

WILLIAM E. ROWBOTHAM, LEMS FORD											
1B	4	9	A	Marquis.....	36	44	85	8	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	40	39	85	6.7	62.5	1 Hd.	....
"	"	"	"	Apex.....	38	45	85	7.3	63.5	1 Hd.	....
"	"	"	"	Renown.....	37	40	85	8.7	63.5	1 Hd.	....
"	"	"	"	Regent.....	37	41	85	7.3	61.5	1	Sh.
"	"	"	"	Rival.....	31	46	85	6.7	62.5	1 Hd.	....

No significant yield difference between varieties.

WILLIAM J. ZELLER, HAZLET											
1B	4	10	A	Marquis.....	33	33	....	9	64	1	S bl.
"	"	"	"	Thatcher.....	39	33	....	9	62.5	2	Bl.
"	"	"	"	Apex.....	39	33	....	9	62.5	2	Bl.
"	"	"	"	Renown.....	32	33	....	9	64	2	Bl. S g.
"	"	"	"	Regent.....	37	36	....	9	62	2	Bl. S g.
"	"	"	"	Rival.....	29	33	....	9	61	2	Bl. S g.

Necessary difference—5.3 bushels.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1B 4 2 C	Rhuhen Hagel, Hendrie.	1B 4 8 A	Edward Schroeder, Bursstall.
2C 4 4 C	John J. Rebman, Verlo.	1B 4 10 B	Fred Tuffs, Abbey.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 5

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
RICHARD A. JOLLY, MOSSBANK											
1A	5	1	A	Marquis.....	19	39	102	9.3	52.5	5 Spec.	B sh. G.
"	"	"	"	Thatcher.....	18	37	102	9	49.5	6 Spec.	B sh.
"	"	"	"	Apex.....	18	39	102	9	52	5 Spec.	B sh.
"	"	"	"	Renown.....	16	38	102	4	53	4 Spec.	B sh. P.
"	"	"	"	Regent.....	17	39	102	7.3	48	Feed	B sh. G.
"	"	"	"	Rival.....	14	40	102	8	51	5 Spec.	B sh.

No significant yield difference between varieties.

ERIC LARS TOLLEFSON, ETTINGTON											
1A	5	1	B	Marquis.....	16	41	113	7.5	58	2	Sh.
"	"	"	"	Thatcher.....	17	42	112	7.7	57	3	Bl. Sh.
"	"	"	"	Apex.....	15	42	112	6.7	58	2	Bl. Sh.
"	"	"	"	Renown.....	15	40	111	7.8	59	2	Bl. Sh.
"	"	"	"	Regent.....	16	41	112	7	55	5	B sh. L w.
"	"	"	"	Rival.....	20	45	111	8.8	56.5	4	B sh. L w.

No significant yield difference between varieties.

Wheat Pool District 5—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
HUGH G. LAZENBY, ST. BOSWELLS											
1A	5	2	A	Marquis.....	11	28	119	8	60	1	Sh.
"	"	"	"	Thatcher.....	12	28	119	8	58	2	Sh.
"	"	"	"	Apex.....	11	28	119	8	59	2	Sh.
"	"	"	"	Renown.....	8	28	119	9	60	2	Sh.
"	"	"	"	Regent.....	12	28	118	9	57.5	3	Sh. S g.
"	"	"	"	Rival.....	10	29	119	7	59	2	Sh.
Necessary difference—1.5 bushels.											
LEO NELSON PELLETIER, GRAVELBOURG											
1A	5	2	B	Marquis.....	....	38	104	7.7	60	1	L w.
"	"	"	"	Thatcher.....	....	41	103	7.3	59	2	L w.
"	"	"	"	Apex.....	....	38	103	8.7	61	1	L w.
"	"	"	"	Renown.....	....	41	104	7.3	*	1 E.	S sh.
"	"	"	"	Regent.....	....	38	104	7.3	56	4	L w.
"	"	"	"	Rival.....	....	41	103	8	61	1	L w.
Yields discarded.											
GEORGE A. BANNERMAN, NEVILLE											
2C	5	3	A	Marquis.....	34	33	118	7.3	65.5	1 Hd.	....
"	"	"	"	Thatcher.....	35	36	112	8	65	1 Hd.	....
"	"	"	"	Apex.....	34	36	110	8	65	1 Hd.	....
"	"	"	"	Renown.....	33	39	113	8	66	1 Hd.	....
"	"	"	"	Regent.....	37	38	114	8.7	64.5	1 Hd.	....
"	"	"	"	Rival.....	27	37	114	8.7	64.5	1 Hd.	....
No significant yield difference between varieties.											
NEIL ROBERTSON MARJERISON, NEVILLE											
2C	5	3	B	Marquis.....	17	28	116	9.7	61.5	1	L w.
"	"	"	"	Thatcher.....	20	28	111	10	60	1	Sh. Bl.
"	"	"	"	Apex.....	22	29	115	8.3	61.5	1	L w.
"	"	"	"	Renown.....	19	31	112	10	61.5	1	S g.
"	"	"	"	Regent.....	18	30	113	8.7	60	2	Sh. G.
"	"	"	"	Rival.....	19	30	116	10	60	1	Bl.
No significant yield difference between varieties.											
EUSTACE HEDLEY DUNN, BURNHAM											
1B	5	4	A	Marquis.....	26	33	108	10	61	1	S g.
"	"	"	"	Thatcher.....	25	31	105	10	58	4	Sh. V g.
"	"	"	"	Apex.....	25	33	106	10	60.5	4	V g.
"	"	"	"	Renown.....	21	32	104	10	60	2	Sh. G.
"	"	"	"	Regent.....	23	33	105	9.3	58.5	2	Sh. G.
"	"	"	"	Rival.....	24	35	107	9.3	60.5	1	V g.
No significant yield difference between varieties.											
ROBERT L. ARMSON, WIWA HILL											
1A	5	5	A	Marquis.....	11	27	....	10	56	4	Sh. G.
"	"	"	"	Thatcher.....	13	32	....	10	53.5	4 Spec.	B sh.
"	"	"	"	Apex.....	13	31	....	10	54.5	4 Spec.	B sh.
"	"	"	"	Renown.....	13	31	....	10	56	4	B sh.
"	"	"	"	Regent.....	16	31	....	10	52.5	5 Spec.	B sh.
"	"	"	"	Rival.....	16	33	....	10	53	4 Spec.	B sh.
No significant yield difference between varieties.											
LEONARD GIBBONS, HODGEVILLE											
1A	5	5	B	Marquis.....	12	27	108	7.7	59	3	Sh. G.
"	"	"	"	Thatcher.....	19	30	105	7	58	3	Sh. Bl.
"	"	"	"	Apex.....	15	31	103	6	59	2	Sh.
"	"	"	"	Renown.....	16	30	104	7.3	58.5	3	P. Sh. G.
"	"	"	"	Regent.....	13	30	105	7	57	3	Sh. G.
"	"	"	"	Rival.....	14	35	108	7.7	59	2	Sh.
No significant yield difference between varieties.											
DAVID GILBERT MORGAN, OLD WIVES											
1A	5	6	A	Marquis.....	25	36	107	10	63	4	V g.
"	"	"	"	Thatcher.....	28	36	105	10	63	4	V g.
"	"	"	"	Apex.....	30	38	105	10	63.5	2	S g.
"	"	"	"	Renown.....	27	36	105	10	64	4	V g.
"	"	"	"	Regent.....	29	39	105	10	62	4	V g.
"	"	"	"	Rival.....	29	41	105	10	63	2	S g.
No significant yield difference between varieties.											
CHARLES BURTON WILSON, CODERRE											
1A	5	6	B	Marquis.....	17	31	105	9	62	1 Hd.	....
"	"	"	"	Thatcher.....	24	29	100	10	61	1	....
"	"	"	"	Apex.....	17	30	103	8.7	62	1 Hd.	....
"	"	"	"	Renown.....	21	31	102	9	63	1 Hd.	....
"	"	"	"	Regent.....	22	31	101	9	62	1 Hd.	....
"	"	"	"	Rival.....	17	33	105	9	62	1 Hd.	....
No significant yield difference between varieties.											

* Insufficient to weigh.

E.—Estimated.

Wheat Pool District 5—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
WILSON A. WOLSTENHOLME, BOHARM											
1A	5	7	A	Marquis.....	30	....	....	....	62.5	1	S g.
"	"	"	"	Thatcher.....	34	....	....	....	60	1	Bl. Sh.
"	"	"	"	Apex.....	34	....	....	....	61	1	Sh.
"	"	"	"	Renown.....	33	....	....	....	62.5	1	S g.
"	"	"	"	Regent.....	34	....	....	....	60	2	Sh. G.
"	"	"	"	Rival.....	39	....	....	....	61	1	L w.
No significant yield difference between varieties.											
THOMAS LEONARD, PARKBEG											
1A	5	7	B	Marquis.....	4	....	....	....	56	4	Sh.
"	"	"	"	Thatcher.....	6	....	....	....	53	4 Spec.	B sh.
"	"	"	"	Apex.....	6	....	....	....	53.5	4 Spec.	B sh.
"	"	"	"	Renown.....	3	....	....	....	52.5	5 Spec.	B sh.
"	"	"	"	Regent.....	4	....	....	....	49.5	6 Spec.	B sh.
"	"	"	"	Rival.....	4	....	....	....	50.5	6 Spec.	B sh.
No significant yield difference between varieties.											
JAMES DRAKE, DARMODY											
1B	5	8	A	Marquis.....	11	35	....	8.7	56.5	4	B sh.
"	"	"	"	Thatcher.....	13	32	....	8.7	53	4 Spec.	Bl. B sh.
"	"	"	"	Apex.....	11	32	....	7.3	56	4	B sh.
"	"	"	"	Renown.....	11	32	....	7.7	54	4 Spec.	Bl. B sh.
"	"	"	"	Regent.....	11	37	....	9	52	5	Bl. B sh.
"	"	"	"	Rival.....	13	31	....	8.7	53	4 Spec.	Bl. B sh.
No significant yield difference between varieties.											
DARL EDWIN HICKS, MARQUIS											
2A	5	8	B	Marquis.....	27	48	....	9.2	59	2	S g.
"	"	"	"	Thatcher.....	31	45	....	9.2	57.5	3	Sh. Bl.
"	"	"	"	Apex.....	25	47	....	8.5	56.5	4	B sh. G.
"	"	"	"	Renown.....	30	47	....	10	60.5	1	Sh.
"	"	"	"	Regent.....	35	48	....	10	57.5	3	Sh. G.
"	"	"	"	Rival.....	34	50	....	10	56.5	4	B sh.
No significant yield difference between varieties.											
ALBERT SMITH, DROXFORD											
1A	5	9	A	Marquis.....	26	33	101	10	63	1	Sh.
"	"	"	"	Thatcher.....	28	34	95	9.3	63	1	Bl.
"	"	"	"	Apex.....	28	34	98	9	63.5	1	Bl. Sh.
"	"	"	"	Renown.....	23	40	96	9.3	62	2	Bl. Sh.
"	"	"	"	Regent.....	26	34	97	9.3	64	1	Bl.
"	"	"	"	Rival.....	30	36	96	9	63	1	Sh.
No significant yield difference between varieties.											
BOWYER BRADFORD, JR., LAWSON											
1B	5	9	B	Marquis.....	18	23	102	10	61	1	Sh.
"	"	"	"	Thatcher.....	22	26	102	10	61	1	Bl. Sh.
"	"	"	"	Apex.....	21	25	102	10	61.5	1	L w.
"	"	"	"	Renown.....	20	25	102	10	60.5	1	Sh.
"	"	"	"	Regent.....	23	24	102	10	61	1	Bl.
"	"	"	"	Rival.....	19	24	106	10	61.5	1	Bl.
No significant yield difference between varieties.											
ROBERT W. MONTGOMERY, MORSE											
1B	5	10	A	Marquis.....	23	38	....	9.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	28	40	....	9.7	62.5	1 Hd.	....
"	"	"	"	Apex.....	25	41	....	9	64	1 Hd.	....
"	"	"	"	Renown.....	22	37	....	9.3	64	1 Hd.	....
"	"	"	"	Regent.....	33	41	....	8.7	61.5	1	Sh. S g.
"	"	"	"	Rival.....	26	41	....	8	62.5	1 Hd.	....
No significant yield difference between varieties.											
ARTHUR POTTS, GLEN KERR											
1B	5	10	B	Marquis.....	22	41	108	10	60.5	2	Bl.
"	"	"	"	Thatcher.....	29	40	105	10	60	3	Bl. Sh.
"	"	"	"	Apex.....	25	41	107	10	62	2	Bl.
"	"	"	"	Renown.....	22	41	105	10	61.5	2	Bl.
"	"	"	"	Regent.....	34	41	109	10	60	3	Bl. Sh.
"	"	"	"	Rival.....	15	43	110	10	58	3	B bl.
Necessary difference—5.5 bushels.											

WHEAT POOL DISTRICT 6

Cereal variety zone	Dist.	Sub- dist.	Test desig- nation	Varieties	Yield bus. per acre	Plant height in inches	Days seed- ing to ripe	Straw strength	Pounds per measured bushel	Commer- cial grades	Grading remarks
ORVAL SIMMONS, COLFAX											
2A	6	1	A	Marquis.....	26	120	9	61	1	Sh.	
"	"	"	"	Thatcher.....	24	119	10	58	2	Bl. Sh.	
"	"	"	"	Apex.....	26	120	10	60.5	1	"	
"	"	"	"	Renown.....	23	121	8	60.5	1	Sh.	
"	"	"	"	Regent.....	29	118	10	58	2	Bl. Sh.	
"	"	"	"	Rival.....	31	119	9	60.5	1	Sh.	

Yields discarded. Considerable grasshopper damage.

DONALD A. BUCHANAN, FRANCIS											
2A	6	2	A	Marquis.....	8	....	....	62.5	1	S bl.	
"	"	"	"	Thatcher.....	15	....	....	61.5	2	Bl. Sh.	
"	"	"	"	Apex.....	10	....	....	62	1	S bl.	
"	"	"	"	Renown.....	10	....	....	61.5	1	S bl.	
"	"	"	"	Regent.....	12	....	....	60	2	Bl. Sh.	
"	"	"	"	Rival.....	15	....	....	61.5	2	Bl. Sh.	

Necessary difference—1.5 bushels.

CLIFFORD W. KENNEDY, KRONAU											
2A	6	2	B	Marquis.....	6	22	116	63	1	S g.	
"	"	"	"	Thatcher.....	6	21	113	62.5	1	S bl.	
"	"	"	"	Apex.....	7	21	116	63	1 Hd.	....
"	"	"	"	Renown.....	7	21	116	63	1 Hd.	....
"	"	"	"	Regent.....	9	22	114	61	1	Sh. S g.	
"	"	"	"	Rival.....	6	22	117	63.5	1 Hd.	....

No significant yield difference between varieties.

LAUREL DWIGHT NELSON, WILCOX											
2A	6	3	A	Marquis.....	....	39	....	10	63	1 Hd.	....
"	"	"	"	Thatcher.....	....	38	....	10	62.5	1 Hd.	....
"	"	"	"	Apex.....	....	41	....	10	63.5	1 Hd.	....
"	"	"	"	Renown.....	....	38	....	10	64	1 Hd.	....
"	"	"	"	Regent.....	....	39	....	10	62	1	Sh. S g.
"	"	"	"	Rival.....	....	39	....	9	63	1 Hd.	....

Yields discarded. Part fertilized.

EARL HARRISON CHARTER, MILESTONE											
2A	6	3	B	Marquis.....	23	31	101	9	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	24	30	101	9.7	61	1	Sh.
"	"	"	"	Apex.....	23	31	101	7.7	62.5	1 Hd.	....
"	"	"	"	Renown.....	19	30	99	9.3	61	1	Sh.
"	"	"	"	Regent.....	19	30	99	9	60.5	2	G.
"	"	"	"	Rival.....	26	30	99	8.3	61.5	1	L w.

Necessary difference—3.1 bushels.

DONALD CLIFTON CAMPBELL, AVONLEA											
1A	6	4	A	Marquis.....	14	32	....	9.7	55	4 Spec.	B sh.
"	"	"	"	Thatcher.....	13	29	....	9.7	54.5	4 Spec.	B sh.
"	"	"	"	Apex.....	12	32	....	9.7	53.5	4 Spec.	B sh.
"	"	"	"	Renown.....	11	30	....	9.7	56	4	P. Sh.
"	"	"	"	Regent.....	14	30	....	9.7	53	5	B sh. G.
"	"	"	"	Rival.....	14	32	....	9.3	55	4 Spec.	B sh.

No significant yield difference between varieties.

GEORGE PETER MACHMER, SPRING VALLEY											
1A	6	4	B	Marquis.....	13	32	113	6	60	5	V g.
"	"	"	"	Thatcher.....	16	33	105	6.7	57.5	3	Sh.
"	"	"	"	Apex.....	15	29	114	7.3	60	1	Sh.
"	"	"	"	Renown.....	15	32	103	4.3	60	1	Sh.
"	"	"	"	Regent.....	14	30	104	5.7	56.5	4	Sh. G.
"	"	"	"	Rival.....	13	28	114	7.7	60.5	1	L w.

No significant yield difference between varieties.

JACK VERNON LIND, BAILDON											
1A	6	5	A	Marquis.....	24	....	87	9	61.5	1	S g.
"	"	"	"	Thatcher.....	29	....	87	8.7	60	1	Sh. Bl.
"	"	"	"	Apex.....	20	....	98	8.7	61.5	1	L w.
"	"	"	"	Renown.....	20	....	88	9	61.5	1	S g.
"	"	"	"	Regent.....	20	....	87	8.7	58.5	2	Sh. G.
"	"	"	"	Rival.....	23	....	88	8.7	60	1	Sh. S g.

No significant yield difference between varieties.

WILLIAM B. GREEN, BOHARM											
1A	6	5	B	Marquis.....	16	35	103	10	61.5	1	L w.
"	"	"	"	Thatcher.....	21	36	103	10	58	2	Sh.
"	"	"	"	Apex.....	17	35	103	10	61	1	L w.
"	"	"	"	Renown.....	16	35	103	10	60	1	Sh.
"	"	"	"	Regent.....	20	33	103	10	58.5	2	Sh.
"	"	"	"	Rival.....	20	37	103	10	60.5	1	L w.

No significant yield difference between varieties.

Wheat Pool District 6—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
STANLEY P. SORENSON, ROULEAU											
2A	6	6	A	Marquis.....	27	36	116	9.2	65	1 Hd.	....
"	"	"	"	Thatcher.....	25	33	114	10	64	1 Hd.	....
"	"	"	"	Apex.....	29	36	116	9.3	65	1 Hd.	....
"	"	"	"	Renown.....	25	33	114	9.8	65	1 Hd.	....
"	"	"	"	Regent.....	28	36	114	9.7	63.5	1 Hd.	....
"	"	"	"	Rival.....	26	37	116	9.7	64	1 Hd.	....
No significant yield difference between varieties.											
JACK E. HARLTON, STONY BEACH											
2A	6	6	B	Marquis.....	16	36	100	10	62	1 Hd.	....
"	"	"	"	Thatcher.....	15	35	98	10	63	1	....
"	"	"	"	Apex.....	19	36	98	10	64	1 Hd.	....
"	"	"	"	Renown.....	15	35	98	10	64	1 Hd.	....
"	"	"	"	Regent.....	19	36	98	10	62	1	....
"	"	"	"	Rival.....	19	37	96	10	63	1	....
Necessary difference—Samples bulked.											
RAY CHARLES CLARKE, R.R. No. 2, REGINA											
2A	6	7	A	Marquis.....	....	39	107	10	63	2	G.
"	"	"	"	Thatcher.....	....	35	107	9	62	1	S g.
"	"	"	"	Apex.....	....	37	107	10	62.5	1	S g.
"	"	"	"	Renown.....	....	36	107	9	63.5	1	S g.
"	"	"	"	Regent.....	....	38	107	9	62	2	Sh. G.
"	"	"	"	Rival.....	....	37	107	9	63.5	1	S g.
Yields rejected. Samples incomplete.											
MAX G. LEIBEL, BALCONIE											
2A	6	7	B	Marquis.....	13	30	88	9.7	53.5	4 Spec.	B sh.
"	"	"	"	Thatcher.....	15	30	87	10	51	5 Spec.	B sh.
"	"	"	"	Apex.....	13	30	87	9.3	52	5 Spec.	B sh.
"	"	"	"	Renown.....	14	30	87	10	54	4 Spec.	B sh.
"	"	"	"	Regent.....	14	31	87	9.3	49	6 Spec.	B sh.
"	"	"	"	Rival.....	14	32	86	9	50	6 Spec.	B sh.
No significant yield difference between varieties.											
DONALD A. WOOD, INDIAN HEAD											
3A	6	8	A	Marquis.....	8	25	92	9	58	2	B sh.
"	"	"	"	Thatcher.....	14	31	92	10	58.5	2	L w. Bl. Sh.
"	"	"	"	Apex.....	7	28	92	9	57	3	B sh.
"	"	"	"	Renown.....	10	29	92	9.3	56	4	L w. B sh.
"	"	"	"	Regent.....	9	28	92	10	53	4 Spec.	B sh.
"	"	"	"	Rival.....	7	29	92	9.3	57	3	B sh.
No significant yield difference between varieties.											
RICHARD C. SEYMOUR, FORT QU'APPELLE											
3A	6	9	A	Marquis.....	....	31	109	9	....	....	....
"	"	"	"	Thatcher.....	....	33	106	8.7	....	....	....
"	"	"	"	Apex.....	....	31	107	9	....	....	....
"	"	"	"	Renown.....	....	30	106	8.3	....	....	....
"	"	"	"	Regent.....	....	31	106	9.3	....	....	....
"	"	"	"	Rival.....	....	31	107	8.7	....	....	....
Destroyed by stock, no samples received.											
MAURICE CALLOW, GILLESPIE											
3A	6	9	B	Marquis.....	37	46	106	9.5	59.5	2	S g.
"	"	"	"	Thatcher.....	44	44	103	10	58	3	Bl. Sh. G.
"	"	"	"	Apex.....	30	46	103	9.2	56.5	4	Sh. G.
"	"	"	"	Renown.....	37	45	104	9.5	59	2	Sh. S g.
"	"	"	"	Regent.....	33	45	101	9.3	55.5	5	B sh. Bl.
"	"	"	"	Rival.....	36	46	104	9.2	59	2	Bl. Sh.
Necessary difference—5.00 bushels.											
FREDERICK HEADFORD, KEDDLESTON											
2B	6	10	B	Marquis.....	8	26	91	10	58	3	Sh. P.
"	"	"	"	Thatcher.....	10	28	91	10	53.5	4 Spec.	B sh.
"	"	"	"	Apex.....	8	26	89	9.3	57.5	3	Sh.
"	"	"	"	Renown.....	7	26	87	9.3	55	4 Spec.	B sh. P.
"	"	"	"	Regent.....	8	30	88	9.7	52	5 Spec.	B sh. P.
"	"	"	"	Rival.....	10	30	88	10	56	4	B sh.
Necessary difference—1.4 bushels.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2A 6 1 B Joe Howlett, Lang.

2A 6 8 B George Barber, Edgeley.

2A 6 1 C Grant Mitchell, Tyvan.

2A 6 10 A James Pearce, R.R. No. 1, Regina.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 7

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
LIONEL BURKE, DOONSIDE											
3A	7	1	A	Marquis.....	14	32	110	9.7	55	4 Spec.	Bl. Sh.
"	"	"	"	Thatcher.....	12	27	110	9.3	58	2	Bl. Sh.
"	"	"	"	Apex.....	11	30	114	9.3	57	3	Sh.
"	"	"	"	Renown.....	12	29	113	9	59.5	2	Bl.
"	"	"	"	Regent.....	12	31	112	8.3	57	3	Bl. Sh.
"	"	"	"	Rival.....	14	34	111	8.7	55	4 Spec.	Bl. Sh.
No significant yield difference between varieties.											

WM. DONALD FAULKNER, DOONSIDE											
3A	7	1	B	Marquis.....	8	30	111	10	54	4 Spec.	B sh.
"	"	"	"	Thatcher.....	9	26	111	10	54.5	4 Spec.	B sh.
"	"	"	"	Apex.....	9	30	109	10	57	3	Sh. S g.
"	"	"	"	Renown.....	7	26	111	10	54	4 Spec.	Sh. S g.
"	"	"	"	Regent.....	10	28	111	10	54.5	4 Spec.	B sh.
"	"	"	"	Rival.....	6	30	111	5	57.5	3	Sh.
No significant yield difference between varieties.											

LLOYD ALFRED GRIFFIN, MOOSOMIN											
3A	7	2	A	Marquis.....	18	35	78	9.3	61	1	Sh.
"	"	"	"	Thatcher.....	25	33	73	8.7	57.5	3	Bl. Sh.
"	"	"	"	Apex.....	19	33	77	5	60	1	Sh.
"	"	"	"	Renown.....	20	33	74	8.7	58	2	....
"	"	"	"	Regent.....	20	34	74	8	59	2	Sh.
"	"	"	"	Rival.....	23	35	74	8	59	2	Sh.
Necessary difference—2.4 bushels.											

ERIC E. BUSWELL, WAPELLA											
3A	7	2	B	Marquis.....	12	28	107	8	60	2	G. I.
"	"	"	"	Thatcher.....	12	26	104	9	59	2	Sh.
"	"	"	"	Apex.....	13	26	107	9	59.5	2	Sh. P.
"	"	"	"	Renown.....	10	27	105	9	62	1	....
"	"	"	"	Regent.....	12	26	105	9	59	2	I. P.
"	"	"	"	Rival.....	14	28	105	9	59.5	2	Sh.
No significant yield difference between varieties.											

KENNETH McMILLAN, R.R. No. 3, KENNEDY											
2A	7	3	A	Marquis.....	24	40	105	10	59.5	2	Sh.
"	"	"	"	Thatcher.....	28	36	101	10	61	1	S bl.
"	"	"	"	Apex.....	26	39	105	10	60.5	1	S bl.
"	"	"	"	Renown.....	24	38	101	10	62	1	S g.
"	"	"	"	Regent.....	27	39	103	10	58.5	2	Bl. Sh.
"	"	"	"	Rival.....	27	43	103	9	58.5	2	Bl. Sh.
No significant yield difference between varieties.											

HAROLD LINCOLN, R.R. No. 1, MANOR											
3A	7	3	B	Marquis.....	31	41	....	10	57.5	3	Sh. G.
"	"	"	"	Thatcher.....	41	40	....	10	58	3	Bl. G.
"	"	"	"	Apex.....	32	43	....	8.3	58	3	Bl. G.
"	"	"	"	Renown.....	33	41	....	10	59	2	Bl. S g.
"	"	"	"	Regent.....	35	41	....	9.7	55	4 Spec.	B sh. G
"	"	"	"	Rival.....	30	43	....	8.7	57	3	Sh. G.
No significant yield difference between varieties.											

JOHN BUJACZEK, KIPLING											
2A	7	4	A	Marquis.....	8	28	97	8.7	52.5	5 Spec.	B sh.
"	"	"	"	Thatcher.....	12	29	97	9	50	6 Spec.	B sh.
"	"	"	"	Apex.....	10	29	97	8.7	52	5 Spec.	B sh.
"	"	"	"	Renown.....	9	29	97	9	53	4 Spec.	B sh.
"	"	"	"	Regent.....	8	30	97	9	46	Feed	B sh.
"	"	"	"	Rival.....	7	31	97	9	48	Feed	B sh.
Necessary difference—1.7 bushels.											

MELVIN J. WHITE, INCHKEITH											
3A	7	4	B	Marquis.....	10	30	102	8.3	56	4	Sh. V g.
"	"	"	"	Thatcher.....	10	30	102	8.3	56	4	Sh. G.
"	"	"	"	Apex.....	12	31	103	7.7	56	4	B sh. G.
"	"	"	"	Renown.....	11	30	103	8	57	3	Sh. G.
"	"	"	"	Regent.....	11	30	103	8.3	54.5	5	Sh. G.
"	"	"	"	Rival.....	11	33	104	8.3	57	3	Sh. S g.
No significant yield difference between varieties.											

DONALD H. McKAY, CORNING											
2A	7	5	A	Marquis.....	....	23	96	8.7	....	....	....
"	"	"	"	Thatcher.....	....	24	91	8.7	....	....	....
"	"	"	"	Apex.....	....	27	94	8.3	....	....	....
"	"	"	"	Renown.....	....	26	93	8.7	....	....	....
"	"	"	"	Regent.....	....	26	93	8.7	....	....	....
"	"	"	"	Rival.....	....	26	93	8.7	....	....	....
No samples received.											

Wheat Pool District 7—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
EMILE LABRECHE, MONTMARTRE											
3A	7	6	A	Marquis.....	5	31	105	8.7	59	2	Sh.
"	"	"	"	Thatcher.....	7	28	102	9	57.5	3	Sh.
"	"	"	"	Apex.....	6	27	104	8.3	59	2	Sh.
"	"	"	"	Renown.....	9	32	102	8.8	60.5	1	S sh.
"	"	"	"	Regent.....	9	29	102	9.2	55	5	B sh.
"	"	"	"	Rival.....	9	31	103	9.8	60	1	S sh.
Necessary difference—yields bulked.											
ALBERT F. RIEDER, PEEBLES											
2A	7	6	B	Marquis.....	9	29	102	10	55	4 Spec.	B sh.
"	"	"	"	Thatcher.....	12	29	101	10	49.5	6 Spec.	B sh.
"	"	"	"	Apex.....	10	30	101	9.7	53.5	4 Spec.	B sh.
"	"	"	"	Renown.....	13	30	101	10	54	4 Spec.	B sh.
"	"	"	"	Regent.....	10	30	101	10	51	5 Spec.	B sh. G.
"	"	"	"	Rival.....	12	32	101	10	52	5 Spec.	B sh. G.
No significant yield difference between varieties.											
LORENZE L. SCHNEIDER, WOLSELEY											
3A	7	7	A	Marquis.....	14	36	98	....	57.5	3	Sh.
"	"	"	"	Thatcher.....	20	35	97	....	56.5	4	Bl. B sh.
"	"	"	"	Apex.....	14	36	97	....	56.5	4	Bl. B sh.
"	"	"	"	Renown.....	15	37	96	....	57	3	Bl. B sh.
"	"	"	"	Regent.....	13	35	97	....	50.5	6 Spec.	Bl. B sh.
"	"	"	"	Rival.....	14	37	97	....	55.5	4 Spec.	Bl. B sh.
Necessary difference—2.3 bushels.											
NORMAN YATES, GRENFELL											
3A	7	7	B	Marquis.....	20	38	98	9	57.5	3	B sh.
"	"	"	"	Thatcher.....	21	36	96	10	57.5	3	B sh.
"	"	"	"	Apex.....	21	37	96	5	57	3	B sh.
"	"	"	"	Renown.....	23	38	96	10	61	1	Bl.
"	"	"	"	Regent.....	22	39	96	9.3	57	3	B sh.
"	"	"	"	Rival.....	22	38	96	10	57.5	3	B sh.
No significant yield difference between varieties.											
ERNEST LLOYD GRAY, ROCANVILLE											
3A	7	8	A	Marquis.....	14	....	....	....	56.5	4	B sh.
"	"	"	"	Thatcher.....	16	....	....	....	55	4 Spec.	B sh.
"	"	"	"	Apex.....	13	....	....	....	55	4 Spec.	B sh.
"	"	"	"	Renown.....	17	....	....	....	56	4	B sh.
"	"	"	"	Regent.....	15	....	....	....	54	4 Spec.	B sh.
"	"	"	"	Rival.....	14	....	....	....	53.5	4 Spec.	B sh.
Necessary difference—1.5 bushels.											
ALLAN GORDON STRANGLUND, PERCIVAL											
3A	7	8	B	Marquis.....	18	31	96	9	57	4	B sh. G.
"	"	"	"	Thatcher.....	24	35	96	8.7	54.5	4 Spec.	B sh.
"	"	"	"	Apex.....	16	32	96	7.7	55	4 Spec.	B sh.
"	"	"	"	Renown.....	12	28	94	8.3	54.5	4 Spec.	B sh.
"	"	"	"	Regent.....	13	29	94	8	50.5	6 Spec.	B sh. P.
"	"	"	"	Rival.....	19	34	95	8	56	4	B sh. G.
Necessary difference—4.8 bushels.											
LEONARD E. SALKELD, GERALD											
3A	7	9	A	Marquis.....	27	36	102	8.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	32	32	100	8	64	1 Hd.	....
"	"	"	"	Apex.....	20	33	101	8	64	1 Hd.	....
"	"	"	"	Renown.....	25	33	100	9	65	1 Hd.	....
"	"	"	"	Regent.....	22	32	101	8.3	62	1	Bl. S g.
"	"	"	"	Rival.....	24	36	101	7.3	63	1 Hd.	....
No significant yield difference between varieties.											
MURRELL A. ANDERSON, ATWATER											
3A	7	9	B	Marquis.....	....	27	108	9	*	E. 4	....
"	"	"	"	Thatcher.....	....	25	106	9	*	E. 4 Spec.	....
"	"	"	"	Apex.....	....	26	106	8	57.5	3	Sh.
"	"	"	"	Renown.....	....	25	105	10	*	E. 4 Spec.	....
"	"	"	"	Regent.....	....	26	105	9	54	4 Spec.	B sh.
"	"	"	"	Rival.....	....	26	107	8	56	4	Bl. Sh.
Necessary difference—Yields discarded. Samples incomplete.											
ERNEST WM. STILBORN, LEMBERG											
3C	7	10	A	Marquis.....	17	39	108	8	62.5	1	S g.
"	"	"	"	Thatcher.....	17	38	103	6	60.5	1	Sh.
"	"	"	"	Apex.....	15	38	104	7	62	1	S g.
"	"	"	"	Renown.....	14	39	100	6.3	63	1	S g.
"	"	"	"	Regent.....	14	40	102	6.3	60.5	2	Sh. G.
"	"	"	"	Rival.....	15	41	104	6.7	61	1	Bl.
No significant yield difference between varieties.											

* Insufficient to weigh.

E.—Estimated.

Wheat Pool District 7—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
EDWARD J. HANOWSKI, KILLALEY											
3A	7	10	B	Marquis.....	....	30	101	10	53	4 Spec.	Sh. L w.
..	Thatcher.....	....	27	98	10	*	....	..
..	Apex.....	....	29	96	10	56	4	Sh. L w.
..	Renown.....	....	30	98	10	56	4	Sh. L w.
..	Regent.....	....	29	96	10	53	4 Spec.	Sh. L w.
..	Rival.....	....	30	98	10	57	3	Sh. L w.
Necessary difference—Yields discarded.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2A 7 5 B Samuel Edward Allan, Creelman.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 8

PAUL TITOFF, WROXTON											
3B	8	1	B	Marquis.....	17	....	....	....	61.5	1	Bl.
..	..	..	..	Thatcher.....	24	....	....	....	61	2	Bl. Sh.
..	..	..	..	Apex.....	18	....	....	....	64	1	S b p.
..	..	..	..	Renown.....	11	....	....	....	63	2	S b p.
..	..	..	..	Regent.....	14	....	....	....	60.5	2	Bl. Sh.
..	..	..	..	Rival.....	23	....	....	....	62.5	1	Bl.
Necessary difference—Samples bulked.											

JUNE EILEEN SHARP, ROKEYB											
3C	8	2	A	Marquis.....	14	37	108	6.7	62.5	1 Hd.	....
..	..	..	..	Thatcher.....	18	37	106	6.7	62	1 Hd.	....
..	..	..	..	Apex.....	12	37	106	6.7	63	1 Hd.	....
..	..	..	..	Renown.....	11	38	106	7	64	1 Hd.	....
..	..	..	..	Regent.....	15	37	106	6.7	61.5	1	Sh.
..	..	..	..	Rival.....	14	40	106	6.7	62	1 Hd.	....
Necessary difference—Samples bulked.											

GORDON HOLLINGER, DUFF											
3A	8	3	A	Marquis.....	9	20	....	10	60.5	1	Sh. S bl.
..	..	..	..	Thatcher.....	12	20	....	10	58	2	Sh. bl.
..	..	..	..	Apex.....	9	22	....	10	60	1	Bl.
..	..	..	..	Renown.....	11	21	....	9	58	2	Sh.
..	..	..	..	Regent.....	11	23	....	9	56.5	4	B sh. Bl.
..	..	..	..	Rival.....	10	23	....	9.7	59	2	L w.
No significant yield difference between varieties.											

ROBERT KERSS DODDS, YORKTON											
3C	8	4	A	Marquis.....	25	41	106	10	62	4	V g.
..	..	..	..	Thatcher.....	29	41	106	10	61	4	V g.
..	..	..	..	Apex.....	24	42	102	8.7	60.5	3	Sh. G.
..	..	..	..	Renown.....	25	44	101	9.7	62.5	4	V g.
..	..	..	..	Regent.....	29	44	106	10	62	4	V g.
..	..	..	..	Rival.....	30	47	102	9	62.5	4	V g.
No significant yield difference between varieties.											

IRVING H. BITTNER, YORKTON											
3C	8	4	B	Marquis.....	20	28	99	9	63	1 Hd.	....
..	..	..	..	Thatcher.....	23	27	98	9	61.5	1	L w.
..	..	..	..	Apex.....	21	30	97	8	62.5	1 Hd.	....
..	..	..	..	Renown.....	17	28	97	8	62.5	1 Hd.	....
..	..	..	..	Regent.....	20	25	97	8	59.5	2	Bl. Sh.
..	..	..	..	Rival.....	20	29	97	8	62.5	1 Hd.	....
No significant yield difference between varieties.											

OSCAR JECHEL, BEAVERDALE											
3C	8	4	C	Marquis.....	18	33	99	8.7	64	3	V g.
..	..	..	..	Thatcher.....	26	36	90	8	60	3	Sh. G.
..	..	..	..	Apex.....	21	38	96	7	63.5	2	S g.
..	..	..	..	Renown.....	26	35	93	8.7	62.5	2	Sh. G.
..	..	..	..	Regent.....	22	33	89	8	59.5	3	Sh. G.
..	..	..	..	Rival.....	22	37	97	7	62.5	1	Sh.
No significant yield difference between varieties.											

* Insufficient to weigh.

E.—Estimated.

Wheat Pool District 8—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
IAIN COWAN MACLEAN, KAMSACK											
3B	8	5	A	Marquis.....	25	32	108	8.7	63.5	1	S g.
"	"	"	"	Thatcher.....	31	30	104	9	64.5	1	S g.
"	"	"	"	Apex.....	28	31	105	8	64	1 Hd.	"
"	"	"	"	Renown.....	26	30	103	7.3	66	1 Hd.	"
"	"	"	"	Regent.....	30	33	104	7.3	64	1	S g.
"	"	"	"	Rival.....	29	33	106	9	64	1	S g.
No significant yield difference between varieties.											
EARL TROFIMENKOFF, RUNNYMEDE											
3B	8	5	C	Marquis.....	25	30	92	9	65	3	G.
"	"	"	"	Thatcher.....	29	29	92	9	63	3	G.
"	"	"	"	Apex.....	28	31	92	8	63.5	3	G.
"	"	"	"	Renown.....	26	32	92	8	63	4	V g.
"	"	"	"	Regent.....	27	29	92	8	63	4	V g.
"	"	"	"	Rival.....	34	30	92	8	63	3	G.
No significant yield difference between varieties.											
CARL KORTMEYER, TADMORE											
3C	8	6	A	Marquis.....	26	38	114	10	64	3	G.
"	"	"	"	Thatcher.....	32	33	114	10	64.5	3	G.
"	"	"	"	Apex.....	34	38	115	10	64.5	3	G.
"	"	"	"	Renown.....	31	35	114	10	65	3	G.
"	"	"	"	Regent.....	33	37	114	10	64	4	V g.
"	"	"	"	Rival.....	31	39	114	10	64	4	V g.
No significant yield difference between varieties.											
MIKE ZAWERWCHA, BURGIS											
3C	8	6	B	Marquis.....	29	....	103	6.7	60	1	Sh.
"	"	"	"	Thatcher.....	38	....	103	7.3	61	2	Bl. S g.
"	"	"	"	Apex.....	29	....	103	7.7	60	2	Bl. S g. B p.
"	"	"	"	Renown.....	27	....	103	7.3	60	2	Bl. Sh. S g.
"	"	"	"	Regent.....	32	....	103	7	59	2	Bl. Sh.
"	"	"	"	Rival.....	29	....	103	6.7	61	2	Bl. S g. S f.
No significant yield difference between varieties.											
NORMAN R. TURNER, INVERMAY											
3C	8	7	A	Marquis.....	25	38	....	8.7	59	3	Sh. G.
"	"	"	"	Thatcher.....	49	37	....	6.3	63.5	3	Bl. G.
"	"	"	"	Apex.....	32	37	....	6.3	63	4	G. B p.
"	"	"	"	Renown.....	47	38	....	8	64	3	G.
"	"	"	"	Regent.....	44	37	....	6.7	63	3	G.
"	"	"	"	Rival.....	45	40	....	8	63.5	3	G.
Necessary difference—8.3 bushels.											
JOHN TRETIK, RAMA											
3C	8	7	C	Marquis.....	29	....	....	....	65	1	S g.
"	"	"	"	Thatcher.....	27	....	....	....	65	1	S g.
"	"	"	"	Apex.....	38	....	....	....	65	1 Hd.	"
"	"	"	"	Renown.....	31	....	....	....	65	1 Hd.	"
"	"	"	"	Regent.....	38	....	....	....	64	1	S g.
"	"	"	"	Rival.....	39	....	....	....	65	1	S g.
No significant yield difference between varieties.											
CLIFFORD LAURENCE ROSTE, HINCHLIFFE											
4A	8	8	A	Marquis.....	33	41	116	7.3	65.5	3	G. I.
"	"	"	"	Thatcher.....	34	38	116	8.3	65	3	G. I.
"	"	"	"	Apex.....	40	42	116	7	64.5	2	V g.
"	"	"	"	Renown.....	40	46	110	9	65	2	S g.
"	"	"	"	Regent.....	35	41	115	7.7	64	3	Sh. G.
"	"	"	"	Rival.....	45	40	115	6	64.5	3	Sh. G.
No significant yield difference between varieties.											
STEWART SWAN, PREECEVILLE											
4A	8	8	B	Marquis.....	26	30	116	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	22	26	112	10	63.5	1	Bl.
"	"	"	"	Apex.....	22	30	112	9	64.5	1 Hd.	....
"	"	"	"	Renown.....	19	28	112	9.3	64.5	1 Hd.	....
"	"	"	"	Regent.....	20	28	112	10	65	1	Bl. S g.
"	"	"	"	Rival.....	28	34	112	10	64	1	S g.
Necessary difference—4.3 bushels.											
FRED CZORNOBAY, JR., ENDEAVOUR											
4A	8	8	C	Marquis.....	27	41	83	9.3	63	3	St. G. I.
"	"	"	"	Thatcher.....	39	39	83	9.3	64	2	St. G. I.
"	"	"	"	Apex.....	41	40	83	8	64.5	3	St. G. I. S sp.
"	"	"	"	Renown.....	27	38	82	10	65	2	G. I.
"	"	"	"	Regent.....	34	40	82	9	64	2	St. G. I.
"	"	"	"	Rival.....	33	40	84	9	65	2	G. I.
No significant yield difference between varieties.											

Wheat Pool District 8—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
MIKE A. CHEREWYK, NORQUAY											
3B	8	9	A	Marquis.....	35	35	107	10	64.5	3	G. I.
"	"	"	"	Thatcher.....	43	36	106	10	64	3	G. I.
"	"	"	"	Apex.....	36	38	105	10	65	2	S. g. I.
"	"	"	"	Renown.....	35	42	102	10	65	2	S. g. I.
"	"	"	"	Regent.....	35	36	106	10	63.5	2	G. I.
"	"	"	"	Rival.....	36	37	104	10	65	2	G. I.

No significant yield difference between varieties.

MARTIN S. GRYWACHESKI, NORQUAY											
3B	8	9	C	Marquis.....	34	37	107	10	64	3	G.
"	"	"	"	Thatcher.....	50	37	102	9.8	64	3	G.
"	"	"	"	Apex.....	44	37	105	8.3	64	3	G. S b p.
"	"	"	"	Renown.....	39	37	102	8.5	64	3	G.
"	"	"	"	Regent.....	45	38	102	9	63	4	V. g.
"	"	"	"	Rival.....	43	39	105	8.7	63.5	3	G.

No significant yield difference between varieties.

LOUIS E. J. F. PILGRIM, PELLY											
3B	8	10	A	Marquis.....	36	39	110	10	63	2	I.
"	"	"	"	Thatcher.....	36	35	110	10	64	2	I.
"	"	"	"	Apex.....	32	35	110	10	64	2	B p. I.
"	"	"	"	Renown.....	35	37	110	10	65	2	B p. I.
"	"	"	"	Regent.....	34	38	110	10	65	2	I.
"	"	"	"	Rival.....	33	39	109	9	64	3	B p. I.

No significant yield difference between varieties.

PHILIP PASIEKA, ARRAN											
3B	8	10	B	Marquis.....	47	43	106	8	64	2	St.
"	"	"	"	Thatcher.....	49	41	103	8	63	3	St. Bl.
"	"	"	"	Apex.....	42	42	104	8	62.5	3	St. G. Bp.
"	"	"	"	Renown.....	47	41	103	8	64	2	St. Bl.
"	"	"	"	Regent.....	45	42	103	8	61	2	St. Bl.
"	"	"	"	Rival.....	46	44	104	8	61	3	St. G.

No significant yield difference between varieties.

STANLEY NIMETZ, ARRAN											
3B	8	10	C	Marquis.....	50	37	106	10	63	3	St. G. I.
"	"	"	"	Thatcher.....	55	34	103	9.3	63	3	Bl. G. I.
"	"	"	"	Apex.....	44	31	106	6	63	3	G. I. B p.
"	"	"	"	Renown.....	50	35	102	9.7	63.5	3	Bl. G. I.
"	"	"	"	Regent.....	49	33	105	8.3	62	3	Bl. G. I.
"	"	"	"	Rival.....	48	34	104	8.3	62.5	3	St. G. I.

No significant yield difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

3B	8	1	A	Jon Robert Egilsson, Calder.	3B	8	5	B	Michael Ostafie, Mikado.
3C	8	2	B	Davis C. F. Baines, Saltcoats.	3C	8	7	B	Metro N. Sawchuk, Sheho.
3C	8	3	B	Joe Gulash, Jr., McKim.	3B	8	9	B	Miss Margaret H. M. Malcolm, Stenen.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 9

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ROBERT IRVING GILL, JASMIN											
3C	9	1	A	Marquis.....	21	35	117	10	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	26	34	110	10	60	2	Bl. Sh.
"	"	"	"	Apex.....	21	34	109	10	61.5	1	S bl.
"	"	"	"	Renown.....	23	35	115	10	62	1	S g.
"	"	"	"	Regent.....	24	36	110	10	59	2	Bl. Sh.
"	"	"	"	Rival.....	26	37	115	10	60	2	Bl. Sh.

No significant yield difference between varieties.

WILLIAM J. STAN, DYSART											
3A	9	2	A	Marquis.....	18	33	106	9	61.5	1	S g.
"	"	"	"	Thatcher.....	25	33	103	9	61.5	1	S g.
"	"	"	"	Apex.....	22	34	104	8	62.5	1 Hd.	....
"	"	"	"	Renown.....	22	33	102	9	61	1	S g.
"	"	"	"	Regent.....	23	33	103	9	61.5	1	S g.
"	"	"	"	Rival.....	22	33	102	9	62	1 Hd.	....

Necessary difference—2.2 bushels

Wheat Pool District 9—Continued

Cereal variety zone	Dist.	Sub- dist.	Test desig- nation	Varieties	Yield bus. per acre	Plant height in inches	Days seed- ing to ripe	Straw strength	Pounds per measured bushel	Commer- cial grades	Grading remarks
JOHN LUNG, SOUTHEY											
2B	9	2	B	Marquis.....	17	32	101	6.3	61	1	Sh.
"	"	"	"	Thatcher.....	20	32	101	7.7	58.5	2	Bl. Sh.
"	"	"	"	Apex.....	16	32	101	7.7	61.5	1	Sh.
"	"	"	"	Renown.....	18	32	101	8	61	1	Sh
"	"	"	"	Regent.....	18	32	101	8	57.5	3	Bl. Sh.
"	"	"	"	Rival.....	21	32	101	9.7	61	1	Sh.

Necessary difference—2.4 bushels.

ERIC KRAMER, SOUTHEY											
2B	9	3	A	Marquis.....	18	33	101	9.3	53	4 Spec.	Sh.
"	"	"	"	Thatcher.....	19	30	101	10	53	4 Spec.	Sh.
"	"	"	"	Apex.....	13	29	101	7.7	53	4 Spec.	Sh.
"	"	"	"	Renown.....	15	31	101	9.7	53	4 Spec.	Sh.
"	"	"	"	Regent.....	17	32	101	9.7	50	6	B sh.
"	"	"	"	Rival.....	14	32	101	9	54	4 Spec.	B sh.

Necessary difference—2.8 bushels.

MISS VICTORIA LAZAR, LESTOCK											
3C	9	3	B	Marquis.....	35	36	97	10	63	1	S g.
"	"	"	"	Thatcher.....	36	38	93	10	61	1	Sh. G.
"	"	"	"	Apex.....	33	38	95	10	62	1 Hd.	"
"	"	"	"	Renown.....	31	39	95	10	63.5	1	S g.
"	"	"	"	Regent.....	32	39	93	10	60	2	Sh. G.
"	"	"	"	Rival.....	32	38	92	10	62	1	S g.

No significant yield difference between varieties.

LLOYD E. B. NIXON, EARL GREY											
2B	9	4	A	Marquis.....	7	....	....	....	57	3	Bl. Sh.
"	"	"	"	Thatcher.....	10	....	....	....	52	5 Spec.	Bl. B sh.
"	"	"	"	Apex.....	8	....	....	....	55	4 Spec.	Bl. B sh.
"	"	"	"	Renown.....	9	....	....	....	57	3	B sh.
"	"	"	"	Regent.....	6	....	....	....	51	5 Spec.	B sh. Bl.
"	"	"	"	Rival.....	10	....	....	....	55	4 Spec.	Sh. Bl.

No significant yield difference between varieties.

HAROLD W. MORTON, GIBBS											
2B	9	4	B	Marquis.....	16	53	102	9	55	5	L w. B sh.
"	"	"	"	Thatcher.....	22	52	95	10	53	5	B sh.
"	"	"	"	Apex.....	18	56	97	7	56.5	4	B sh.
"	"	"	"	Renown.....	23	52	96	10	57.5	3	B sh.
"	"	"	"	Regent.....	24	53	102	7	54	5	B sh.
"	"	"	"	Rival.....	17	57	98	9	53	5	B sh.

No significant yield difference between varieties.

WM. JAMES LOCK, CYMRIC											
2B	9	5	A	Marquis.....	14	35	96	9.7	59	2	Sh.
"	"	"	"	Thatcher.....	21	37	96	10	57.5	3	Bl. Sh.
"	"	"	"	Apex.....	15	36	96	8.3	55	5 Spec.	Bl. B sh.
"	"	"	"	Renown.....	13	35	96	8.7	54.5	5 Spec.	Bl. B sh.
"	"	"	"	Regent.....	16	37	96	9	54.5	5 Spec.	B sh.
"	"	"	"	Rival.....	18	37	96	9.3	57.5	3	Bl. Sh.

No significant yield difference between varieties.

ARCHIE F. CAMPBELL, GOVAN											
2B	9	5	B	Marquis.....	12	25	108	10	63	1	S g.
"	"	"	"	Thatcher.....	15	24	106	10	61	1	S bl.
"	"	"	"	Apex.....	12	26	106	10	63	1	S bl.
"	"	"	"	Renown.....	12	23	105	10	63	1	S bl.
"	"	"	"	Regent.....	14	24	106	10	61	1	S bl.
"	"	"	"	Rival.....	12	24	106	10	62	1	S bl.

No significant yield difference between varieties.

WM. ROBERT POPE, DRAKE											
2B	9	6	A	Marquis.....	10	22	106	9.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	16	25	99	8.7	63	1 Hd.	....
"	"	"	"	Apex.....	13	25	100	9.3	64.5	1 Hd.	....
"	"	"	"	Renown.....	13	25	99	9.3	64.5	1 Hd.	....
"	"	"	"	Regent.....	10	22	96	9	63	1 Hd.	....
"	"	"	"	Rival.....	16	25	101	8.7	64	1 Hd.	....

Necessary difference—2.9 bushels.

EARL CHESTER LARSON, HATFIELD											
2B	9	6	B	Marquis.....	15	26	107	9	60	3	G.
"	"	"	"	Thatcher.....	17	26	107	9	60	1	S bl.
"	"	"	"	Apex.....	15	25	107	9	62	1	S g.
"	"	"	"	Renown.....	14	25	107	9.3	59.5	3	Sh. G.
"	"	"	"	Regent.....	14	24	107	9	57.5	3	L w.
"	"	"	"	Rival.....	16	29	107	8	61	1	S g.

No significant yield difference between varieties.

Wheat Pool District 9—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
HARRY F. WODTKE, PUNNICHY											
3C	9	7	A	Marquis.....	42	44	105	8.3	60	2	Sh. G.
"	"	"	"	Thatcher.....	53	41	105	10	63	1	S g.
"	"	"	"	Apex.....	38	42	105	8.3	58.5	2	Sh. G.
"	"	"	"	Renown.....	51	42	105	10	63	1 Hd.	"
"	"	"	"	Regent.....	42	44	105	9.7	60	1	Sh.
"	"	"	"	Rival.....	41	46	105	9.7	60	1	Sh.
No significant yield difference between varieties.											

JACK T. BUITENHUIS, RAYMORE											
2B	9	7	B	Marquis.....	31	"	"	"	63.5	1 Hd.	"
"	"	"	"	Thatcher.....	37	"	"	"	61.5	1	Bl. Sh.
"	"	"	"	Apex.....	32	"	"	"	62.5	1 Hd.	"
"	"	"	"	Renown.....	33	"	"	"	63	1 Hd.	"
"	"	"	"	Regent.....	32	"	"	"	62	1	Bl.
"	"	"	"	Rival.....	35	"	"	"	62	1	Bl.
No significant yield difference between varieties.											

CALVIN C. KRAUSE, JANSEN											
3C	9	8	A	Marquis.....	41	38	105	8	62.5	1 Hd.	"
"	"	"	"	Thatcher.....	48	39	105	8.7	63.5	1 Hd.	"
"	"	"	"	Apex.....	41	38	105	7	64.5	1 Hd.	"
"	"	"	"	Renown.....	47	40	105	8.7	63.5	1 Hd.	"
"	"	"	"	Regent.....	48	39	105	7.3	63	1 Hd.	"
"	"	"	"	Rival.....	46	39	105	7.3	63.5	1 Hd.	"
No significant yield difference between varieties.											

BRICE JOHN BOLT, DAFOE											
2B	9	8	B	Marquis.....	20	20	101	9	63	2	S g. I.
"	"	"	"	Thatcher.....	26	20	101	9	61	2	Bl. S g.
"	"	"	"	Apex.....	17	20	101	9	62.5	1	S g.
"	"	"	"	Renown.....	21	20	101	9	63	1	S g.
"	"	"	"	Regent.....	22	20	101	9	61	2	Sh. S g.
"	"	"	"	Rival.....	22	20	101	9	63	1	S g.
Necessary difference—2.6 bushels.											

WM. ANDERSON, WYNYARD											
3C	9	8	C	Marquis.....	50	47	110	9	64	1 Hd.	"
"	"	"	"	Thatcher.....	54	45	105	10	63	1 Hd.	"
"	"	"	"	Apex.....	54	50	108	9	63	1 Hd.	"
"	"	"	"	Renown.....	50	48	105	9	64	1 Hd.	"
"	"	"	"	Regent.....	53	48	105	9	62.5	1 Hd.	"
"	"	"	"	Rival.....	56	48	108	9	63.5	1 Hd.	"
No significant yield difference between varieties.											

ROBERT M. GILCHRIST, FOAM LAKE											
3C	9	9	A	Marquis.....	25	50	112	9.7	58	2	Sh. L w.
"	"	"	"	Thatcher.....	33	39	108	10	58	2	Sh. L w.
"	"	"	"	Apex.....	27	46	107	5.3	57.5	3	Sh. L w.
"	"	"	"	Renown.....	28	44	108	8	60	1	Sh. L w.
"	"	"	"	Regent.....	22	49	111	9	56.5	4	B sh. L w.
"	"	"	"	Rival.....	37	48	109	7.7	58.5	2	Sh. L w.
No significant yield difference between varieties.											

AUSTIN A. DRYDEN, TUFFNELL											
3C	9	9	B	Marquis.....	15	30	111	7	61	2	G.
"	"	"	"	Thatcher.....	18	33	113	6.7	59.5	2	G.
"	"	"	"	Apex.....	22	34	114	7	61	2	Sh. G.
"	"	"	"	Renown.....	18	31	110	7.3	61	2	Sh. G.
"	"	"	"	Regent.....	18	32	115	7.3	59	3	Sh. G.
"	"	"	"	Rival.....	16	38	110	8.7	61	2	G.
No significant yield difference between varieties.											

TH. GUNNARSON, MOZART											
3C	9	10	A	Marquis.....	"	"	"	"	64.5	1 Hd.	"
"	"	"	"	Thatcher.....	"	"	"	"	64	1 Hd.	"
"	"	"	"	Apex.....	"	"	"	"	64	1 Hd.	"
"	"	"	"	Renown.....	"	"	"	"	64	1 Hd.	"
"	"	"	"	Regent.....	"	"	"	"	63.5	1 Hd.	"
"	"	"	"	Rival.....	"	"	"	"	65	1 Hd.	"
Yields rejected. Samples incomplete.											

HAROLD HORNFORD, ELFROS											
3C	9	10	B	Marquis.....	23	"	101	10	64	1 Hd.	"
"	"	"	"	Thatcher.....	23	"	101	10	62.5	1 Hd.	"
"	"	"	"	Apex.....	20	"	101	10	63	1 Hd.	"
"	"	"	"	Renown.....	22	"	101	10	64	1 Hd.	"
"	"	"	"	Regent.....	15	"	101	10	62.5	1	Sh. S g.
"	"	"	"	Rival.....	20	"	101	10	63	1 Hd.	"
No significant yield difference between varieties.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes
3C 9 1 B Benjamin J. Usher, Balcarres.

NOTE.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 10

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ROBERT SCHROEDER LESLIE, AYLESBURY											
2B	10	1	A	Marquis.....	15	34	101	10	54	4 Spec.	Sh.
"	"	"	"	Thatcher.....	23	34	97	10	54	4 Spec.	Sh.
"	"	"	"	Apex.....	11	34	100	9	52	5 Spec.	Sh.
"	"	"	"	Renown.....	16	32	92	10	54	4 Spec.	Sh. P.
"	"	"	"	Regent.....	13	34	92	9	51	5 Spec.	B sh.
"	"	"	"	Rival.....	19	36	95	10	53	4 Spec.	Sh.
Necessary difference—5.6 bushels.											

CLAYTON EDGARSON McWILLIAMS, HOLDFAST											
2B	10	1	B	Marquis.....	6	....	....	....	54	4 Spec.	B sh.
"	"	"	"	Thatcher.....	9	....	....	....	53	5	B sh.
"	"	"	"	Apex.....	7	....	....	....	56	4	Sh. I.
"	"	"	"	Renown.....	8	....	....	....	56	4	B. sh.
"	"	"	"	Regent.....	7	....	....	....	51	6	B. sh.
"	"	"	"	Rival.....	9	....	....	....	57	4	B. sh. P.
No significant yield difference between varieties.											

LESLIE D. W. COOPER, TUGASKE											
1B	10	2	A	Marquis.....	24	36	101	9.7	63	1 Hd.	....
"	"	"	"	Thatcher.....	27	36	98	10.0	61	1	Sh.
"	"	"	"	Apex.....	26	36	100	8.3	62	1 Hd.	....
"	"	"	"	Renown.....	25	33	99	9.3	63	1 Hd.	....
"	"	"	"	Regent.....	27	35	99	9.3	60.5	1	Sh.
"	"	"	"	Rival.....	24	37	100	9.7	62	1 Hd.	....
Necessary difference—1.7 bushels.											

MAURICE F. COLWELL, TUGASKE											
1B	10	2	C	Marquis.....	18	24	86	....	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	18	24	83	....	61	1	Sh.
"	"	"	"	Apex.....	18	24	83	....	62.5	1 Hd.	....
"	"	"	"	Renown.....	16	24	83	....	62	1 Hd.	....
"	"	"	"	Regent.....	16	24	83	....	60.5	1	Sh.
"	"	"	"	Rival.....	20	24	83	....	62	1 Hd.	....
No significant yield difference between varieties.											

OTTO BROWN, DEMAINE											
1B	10	3	A	Marquis.....	22	....	....	....	58.5	2	Sh.
"	"	"	"	Thatcher.....	26	....	....	....	58	2	Sh.
"	"	"	"	Apex.....	20	....	....	....	58	2	Sh.
"	"	"	"	Renown.....	26	....	....	....	60	1	S sh.
"	"	"	"	Regent.....	25	....	....	....	58	2	Sh.
"	"	"	"	Rival.....	27	....	....	....	59	2	Sh.
No significant yield difference between varieties.											

ARTHUR H. URWIN, BEECHY											
1B	10	3	B	Marquis.....	46	40	118	5.7	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	54	39	118	7.3	63.5	1	Bl.
"	"	"	"	Apex.....	49	39	118	7.7	64	1 Hd.	....
"	"	"	"	Renown.....	48	41	118	9.3	65	1 Hd.	....
"	"	"	"	Regent.....	54	39	119	7.3	63	1	Bl.
"	"	"	"	Rival.....	30	42	117	7.7	62.5	1	Bl.
Necessary difference—7.00 bushels.											

DONALD G. EWING, WISETON											
1B	10	4	A	Marquis.....	42	44	116	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	44	41	115	8	65	1 Hd.	....
"	"	"	"	Apex.....	41	42	115	9	65	1 Hd.	....
"	"	"	"	Renown.....	42	41	111	10	65.5	1 Hd.	....
"	"	"	"	Regent.....	40	41	113	9	64.5	1	S g.
"	"	"	"	Rival.....	46	44	112	10	64.5	1 Hd.	....
No significant yield difference between varieties.											

PHILIP DUNCAN WENSLEY, WISETON											
2B	10	4	B	Marquis.....	28	....	....	9	65	1	S g.
"	"	"	"	Thatcher.....	43	....	....	9	64.5	1	S g.
"	"	"	"	Apex.....	34	....	....	9	65	1 Hd.	....
"	"	"	"	Renown.....	32	....	....	9	65	1 Hd.	....
"	"	"	"	Regent.....	29	....	....	9	64	2	G.
"	"	"	"	Rival.....	32	....	....	9	64	1	S g.
Necessary difference—2.7 bushels.											

HOWARD W. FISHER, BIRSAY											
1B	10	5	A	Marquis.....	24	36	....	8	59.5	5	V g.
"	"	"	"	Thatcher.....	29	34	....	8	58.5	4	Sh. G.
"	"	"	"	Apex.....	28	35	....	8	59.5	4	V g.
"	"	"	"	Renown.....	25	30	....	8	61	4	V g.
"	"	"	"	Regent.....	32	32	....	8	59	4	Sh. G.
"	"	"	"	Rival.....	24	34	....	8	59	3	Sh. G.
No significant yield difference between varieties.											

Wheat Pool District 10—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ARNOLD COLUMBIA, MACROBIE											
2B	10	5	B	Marquis.....	33	41	99	10	61.5	1	L w.
"	"	"	"	Thatcher.....	28	35	98	10	61	1	Sh.
"	"	"	"	Apex.....	30	39	98	10	60	1	Sh.
"	"	"	"	Renown.....	42	40	96	10	62.5	1 Hd.	"
"	"	"	"	Regent.....	39	39	98	10	61	1	Sh.
"	"	"	"	Rival.....	36	41	99	9.7	61	1	Sh.
No significant yield difference between varieties.											

PHILIP ANTONIUS ERLANDSON, OUTLOOK											
2B	10	6	A	Marquis.....	18	24	....	9	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	23	24	....	9.7	63	1 Hd.	....
"	"	"	"	Apex.....	21	27	....	6.3	63	1 Hd.	....
"	"	"	"	Renown.....	22	27	....	9	63.5	1 Hd.	....
"	"	"	"	Regent.....	19	28	....	8	61.5	1	L w.
"	"	"	"	Rival.....	26	30	....	9.7	63	1 Hd.	....
Necessary difference—2.5 bushels.											

LLOYD ADOLPH BERNICK, HAWARDEN											
2B	10	6	B	Marquis.....	24	30	103	10	62	1	S g.
"	"	"	"	Thatcher.....	30	28	103	10	60	2	Sh. G.
"	"	"	"	Apex.....	25	29	103	1.7	60.5	1	S g.
"	"	"	"	Renown.....	29	28	103	9.3	62.5	1	S g.
"	"	"	"	Regent.....	28	29	103	9.7	61	2	Sh. G.
"	"	"	"	Rival.....	25	32	104	10	60	2	Sh. G.
No significant yield difference between varieties.											

RALPH L. GILLESPIE, DAVIDSON											
2B	10	7	A	Marquis.....	15	35	108	10	62	1	Bl.
"	"	"	"	Thatcher.....	20	33	108	10	60	1	Bl. Sh
"	"	"	"	Apex.....	16	35	108	10	61.5	1	Sh.
"	"	"	"	Renown.....	16	34	108	10	61	1	Sh.
"	"	"	"	Regent.....	17	35	108	10	59.5	2	Bl. Sh.
"	"	"	"	Rival.....	13	35	108	10	60	1	Sh.
Necessary difference—2.3 bushels.											

FRANK DONALD SPRATT, DAVIDSON											
2B	10	7	B	Marquis.....	19	41	108	8	60.5	1	Sh.
"	"	"	"	Thatcher.....	22	41	108	8	60	1	Sh. Bl.
"	"	"	"	Apex.....	17	41	108	8	61.5	1	Sh.
"	"	"	"	Renown.....	17	41	106	8	60.5	1	Sh.
"	"	"	"	Regent.....	16	41	108	8	59.5	2	Bl. Sh.
"	"	"	"	Rival.....	17	41	110	8	60	1	Bl.
Necessary difference—3.00 bushels.											

GORDON C. HUMPHREY, RENOWN											
2B	10	8	A	Marquis.....	31	37	100	10	66	1	S g. B p.
"	"	"	"	Thatcher.....	45	37	99	9.3	65.5	1 Hd.	....
"	"	"	"	Apex.....	36	39	100	10	65.5	1 Hd.	....
"	"	"	"	Renown.....	34	37	100	10	66	1 Hd.	....
"	"	"	"	Regent.....	35	38	100	8.7	64.5	2	G. B p.
"	"	"	"	Rival.....	34	39	100	9.8	65.5	1 Hd.	....
No significant yield difference between varieties.											

KENNETH CLARK WEBSTER, IMPERIAL											
2B	10	8	B	Marquis.....	24	46	111	10	64	1	S st.
"	"	"	"	Thatcher.....	23	44	109	10	63	1 Hd.	....
"	"	"	"	Apex.....	22	45	110	10	64.5	1 Hd.	....
"	"	"	"	Renown.....	23	45	111	10	64	1 Hd.	....
"	"	"	"	Regent.....	19	44	112	10	63	1 Hd.	....
"	"	"	"	Rival.....	26	50	110	10	63	1 Hd.	....
No significant yield difference between varieties.											

RICHARD H. STROUTS, HANLEY											
2B	10	9	A	Marquis.....	19	33	115	9.7	61	1	S sh.
"	"	"	"	Thatcher.....	17	33	107	10	58.5	2	Sh.
"	"	"	"	Apex.....	17	31	111	10	60.5	1	Sh.
"	"	"	"	Renown.....	16	33	107	9.7	60	1	Sh.
"	"	"	"	Regent.....	17	34	109	9.7	58	2	Sh.
"	"	"	"	Rival.....	15	33	109	9.3	60	1	Sh.
No significant yield difference between varieties.											

PETER DOSHEN, KENASTON											
2B	10	9	B	Marquis.....	23	42	102	9.5	60.5	1	Sh.
"	"	"	"	Thatcher.....	29	40	102	9.5	59	2	Sh. Bl.
"	"	"	"	Apex.....	23	42	102	9.5	59.5	2	L w.
"	"	"	"	Renown.....	24	42	101	9.5	60.5	1	Sh.
"	"	"	"	Regent.....	27	42	102	9.5	58.5	2	Sh.
"	"	"	"	Rival.....	23	42	101	9.5	59	2	L w.
No significant yield difference between varieties.											

Wheat Pool District 10—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
STANLEY A. MASICH, BLADWORTH											
2B	10	9	C	Marquis.....	29	....	....	....	64.5	1	S g.
"	"	"	"	Thatcher.....	34	....	....	....	63	1 Hd.	....
"	"	"	"	Apex.....	19	....	....	....	63.5	1 Hd.	....
"	"	"	"	Renown.....	29	....	....	....	63	1 Hd.	....
"	"	"	"	Regent.....	34	....	....	....	62	1	G.
"	"	"	"	Rival.....	24	....	....	....	63.5	1 Hd.	....
No significant yield difference between varieties.											

HOWARD J. SCHUMACHER, DONAVON											
2B	10	10	A	Marquis.....	27	41	109	9.5	60	1	Sh.
"	"	"	"	Thatcher.....	30	37	106	9.5	59	2	Bl. Sh.
"	"	"	"	Apex.....	27	38	109	9.5	60	1	Sh.
"	"	"	"	Renown.....	28	36	109	9.5	62	1	S bl.
"	"	"	"	Regent.....	29	36	109	9.5	59	2	Bl. Sh.
"	"	"	"	Rival.....	29	39	109	8.5	59.5	2	Bl. Sh.
No significant yield difference between varieties.											

THOMAS ANDREW MURISON, TESSIER											
2B	10	10	B	Marquis.....	37	41	112	10	62	2	G.
"	"	"	"	Thatcher.....	31	44	112	10	60	2	Sh. G.
"	"	"	"	Apex.....	36	44	112	9.3	61	1	S g.
"	"	"	"	Renown.....	23	44	112	10	61.5	3	P. Sh. G.
"	"	"	"	Regent.....	32	44	112	9.7	60	3	P. Sh. G.
"	"	"	"	Rival.....	33	43	112	10	61	2	Sh. G.
Necessary difference 5.5 bushels.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1B 10 2 B Harold Norman Jackson, Riverhurst.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 11

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ELROY H. GUNDERSON, KYLE											
1B	11	1	A	Marquis.....	52	38	109	9.7	63	1	S g.
"	"	"	"	Thatcher.....	57	37	109	9.3	63	1	S g.
"	"	"	"	Apex.....	48	37	109	9.3	63	1	S g.
"	"	"	"	Renown.....	52	39	109	10	64	1 Hd.	....
"	"	"	"	Regent.....	58	39	109	10	62.5	1	S g.
"	"	"	"	Rival.....	48	41	109	8.7	63	1	S g.
No significant yield difference between varieties.											

SIGVALD OSCAR JORDHEIM, KYLE											
1B	11	1	B	Marquis.....	18	33	....	9.3	65	1 Hd.	....
"	"	"	"	Thatcher.....	20	27	....	8.7	64.5	1 Hd.	....
"	"	"	"	Apex.....	17	29	....	10	64.5	1 Hd.	....
"	"	"	"	Renown.....	15	29	....	8	65	1 Hd.	....
"	"	"	"	Regent.....	17	29	....	8.3	63	1 Hd.	....
"	"	"	"	Rival.....	16	33	....	9.3	63.5	1 Hd.	....
No significant yield difference between varieties.											

JOHN RALPH SALKELD, ISHAM											
1B	11	3	A	Marquis.....	39	44	114	8.7	65	1 Hd.	....
"	"	"	"	Thatcher.....	38	40	114	8.7	64	1 Hd.	....
"	"	"	"	Apex.....	39	43	114	7.7	65	1 Hd.	....
"	"	"	"	Renown.....	37	41	114	7.3	65	1 Hd.	....
"	"	"	"	Regent.....	40	43	114	6.7	64	1 Hd.	....
"	"	"	"	Rival.....	39	45	114	9	64	1 Hd.	....
No significant yield difference between varieties.											

WILBUR F. ANNABLE, MADISON											
1B	11	3	B	Marquis.....	35	....	110	9.7	65	1 Hd.	....
"	"	"	"	Thatcher.....	43	....	110	9.7	65	1 Hd.	....
"	"	"	"	Apex.....	40	....	110	9.7	65.5	1 Hd.	....
"	"	"	"	Renown.....	41	....	110	9.3	65.5	1 Hd.	....
"	"	"	"	Regent.....	37	....	110	9	64.5	1 Hd.	....
"	"	"	"	Rival.....	37	....	110	10	64	1 Hd.	....
Necessary difference—2.4 bushels.											

Wheat Pool District 11—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
EDMUND A. DOUGLAS, EYRE											
1B	11	4	A	Marquis.....	25	37	105	9	58.5	2	Sh.
"	"	"	"	Thatcher.....	31	38	104	9	58	2	Bl. Sh.
"	"	"	"	Apex.....	21	37	105	9	57.5	3	Bl. Sh.
"	"	"	"	Renown.....	21	37	105	10	57	3	L w.
"	"	"	"	Regent.....	26	38	105	9	55	4 Spec.	Bl. B sh.
"	"	"	"	Rival.....	25	40	104	8.7	56.5	4	Sh.
Necessary difference—2.8 bushels.											
KENNETH JOHN BENNETT, EATONIA											
1B	11	4	B	Marquis.....	14	28	93	10	58	3	Sh. G.
"	"	"	"	Thatcher.....	17	24	89	9.3	53.5	4 Spec.	B sh.
"	"	"	"	Apex.....	13	26	91	10	57.5	3	Sh.
"	"	"	"	Renown.....	11	26	92	10	53.5	4 Spec.	B sh.
"	"	"	"	Regent.....	10	26	92	10	52	5 Spec.	B sh.
"	"	"	"	Rival.....	13	26	91	10	58	2	Sh. S g.
Necessary difference—1.3 bushels.											
ELLIOT JAMES FINLEY, DEWAR LAKE											
1B	11	5	A	Marquis.....	34	35	118	8.3	62.5	2	G. I.
"	"	"	"	Thatcher.....	38	35	116	8.3	62	2	S bl. G.
"	"	"	"	Apex.....	36	34	116	8	64	1	S g.
"	"	"	"	Renown.....	34	34	114	9	64	1	S g.
"	"	"	"	Regent.....	35	38	116	9	60.5	3	Sh. G. I.
"	"	"	"	Rival.....	38	38	117	8.3	62.5	2	G. I.
No significant yield difference between varieties.											
CHARLES M. HICKSON, KINDERSLEY											
1B	11	6	B	Marquis.....	31	36	104	9	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	36	36	103	9	63.5	1 Hd.	....
"	"	"	"	Apex.....	33	36	105	9	64.5	1 Hd.	....
"	"	"	"	Renown.....	33	36	103	9.7	64.5	1 Hd.	....
"	"	"	"	Regent.....	34	34	105	9	62	1	Sh. S g.
"	"	"	"	Rival.....	31	37	106	10	63	1 Hd.	....
No significant yield difference between varieties.											
PHILLIP ROSS JAVENS, ROSETOWN											
2B	11	7	A	Marquis.....	47	42	....	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	57	40	....	10	64	1 Hd.	....
"	"	"	"	Apex.....	49	42	....	10	64.5	1 Hd.	....
"	"	"	"	Renown.....	44	42	....	10	65	1 Hd.	....
"	"	"	"	Regent.....	37	40	....	10	64	1 Hd.	....
"	"	"	"	Rival.....	38	46	....	8	64	1 Hd.	....
Necessary difference—9.6 bushels.											
BRUCE KENNETH McDONALD, STRANRAER											
1B	11	8	A	Marquis.....	16	28	97	9.7	58.5	2	Bl. Sh.
"	"	"	"	Thatcher.....	20	28	95	9.3	57	3	Bl. Sh.
"	"	"	"	Apex.....	18	30	96	8.7	59.5	2	Bl.
"	"	"	"	Renown.....	20	30	94	8.7	57.5	3	Bl. Sh.
"	"	"	"	Regent.....	22	28	95	9.3	56	4	B sh. G.
"	"	"	"	Rival.....	21	31	97	9.7	58	2	Bl. Sh.
Necessary difference—2.8 bushels.											
HENRY B. SAWATZKY, HERSCHEL											
1B	11	8	B	Marquis.....	23	39	107	....	57	3	Sh.
"	"	"	"	Thatcher.....	30	39	104	....	56	4	B sh.
"	"	"	"	Apex.....	23	39	106	....	57	3	Sh.
"	"	"	"	Renown.....	22	40	104	....	57	3	Sh.
"	"	"	"	Regent.....	23	40	106	....	54.5	5	B sh. L w.
"	"	"	"	Rival.....	29	41	105	....	57	3	Sh.
Necessary difference—3.5 bushels.											
ERSON HAROLD MOORE, HERSCHEL											
1B	11	8	C	Marquis.....	12	....	....	....	63	1	Bl. Sh.
"	"	"	"	Thatcher.....	14	....	....	....	60	2	Bl. Sh.
"	"	"	"	Apex.....	14	....	....	....	62.5	1	S bl.
"	"	"	"	Renown.....	14	....	....	....	63	1	S bl.
"	"	"	"	Regent.....	13	....	....	....	62	1	Bl. Sh.
"	"	"	"	Rival.....	....	....	....	....	....	....	....
Rival badly damaged and yields discarded. Test irrigated.											
DANIEL ALBIN OLSON, BOX 50, PLENTY											
1B	11	9	A	Marquis.....	....	35	127	9	....	....	....
"	"	"	"	Thatcher.....	....	34	122	9	....	....	....
"	"	"	"	Apex.....	....	36	122	7	....	....	....
"	"	"	"	Renown.....	....	34	126	9	....	....	....
"	"	"	"	Regent.....	....	34	126	8	....	....	....
"	"	"	"	Rival.....	....	34	124	8	....	....	....
No samples received.											

Wheat Pool District 11—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ALEX B. SAXTON, PLENTY											
1B	11	9	B	Marquis.....	41	....	....	....	63	1 Hd.	....
"	"	"	"	Thatcher.....	50	....	....	....	62.5	1 Hd.	....
"	"	"	"	Apex.....	42	....	....	....	64	1 Hd.	....
"	"	"	"	Renown.....	51	....	....	....	64.5	1 Hd.	....
"	"	"	"	Regent.....	55	....	....	....	63	1 Hd.	....
"	"	"	"	Rival.....	49	....	....	....	63	1 Hd.	....
Necessary difference—Samples bulked.											

ALF. ANDERSON, FUSILIER											
1B	11	10	A	Marquis.....	16	30	103	9	63	1 Hd.	....
"	"	"	"	Thatcher.....	17	32	103	9	62	1 Hd.	....
"	"	"	"	Apex.....	12	32	103	9.3	63.5	1 Hd.	....
"	"	"	"	Renown.....	14	30	103	9.7	62.5	1 Hd.	....
"	"	"	"	Regent.....	13	31	103	9.3	60	1	Sh. L w.
"	"	"	"	Rival.....	13	34	105	9.7	63	1 Hd.	....
No significant yield difference between varieties.											

PETER WARKENTIN, SUPERB											
1B	11	10	B	Marquis.....	18	39	107	9.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	20	37	107	8.7	63	1 Hd.	....
"	"	"	"	Apex.....	15	38	106	8	63.5	1 Hd.	....
"	"	"	"	Renown.....	19	37	106	8.7	64.5	1 Hd.	....
"	"	"	"	Regent.....	15	38	107	8	62.5	1 Hd.	....
"	"	"	"	Rival.....	15	40	108	9	63	1 Hd.	....
No significant yield difference between varieties.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2B	11	2	A	Thelma L. Reed, Elrose.	2B	11	7	B	William Shannon Powell, Rosetown
1B	11	5	B	Mervin R. Ellis, Marengo.	2B	11	7	C	Hillside School, Rosetown.
1B	11	6	A	Victor T. Bourne, Netherhill.					

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 12

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
FRANK KODAK, SPRINGWATER											
2D	12	1	A	Marquis.....	25	37	103	9.7	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	29	38	103	10	60.5	1	Sh.
"	"	"	"	Apex.....	28	37	103	10	63	1 Hd.	....
"	"	"	"	Renown.....	26	36	103	9.7	63.5	1 Hd.	....
"	"	"	"	Regent.....	26	37	103	9.7	61	1	....
"	"	"	"	Rival.....	27	36	103	9.7	61.5	1	....
No significant yield difference between varieties.											

CLIFFORD D. TODD, KEPPEL											
2D	12	1	B	Marquis.....	34	36	106	9.3	64	1 Hd.	....
"	"	"	"	Thatcher.....	34	35	104	9	64	1 Hd.	....
"	"	"	"	Apex.....	34	36	105	9.7	63.5	1 Hd.	....
"	"	"	"	Renown.....	27	34	105	9.3	65	1 Hd.	....
"	"	"	"	Regent.....	32	35	103	9	63	1	S g.
"	"	"	"	Rival.....	34	36	106	9	64	1 Hd.	....
No significant yield difference between varieties.											

EMIL L. LEHNERT, PALO											
2D	12	2	A	Marquis.....	22	34	110	10	62.5	1	S g.
"	"	"	"	Thatcher.....	28	32	106	9.7	60	1	Sh.
"	"	"	"	Apex.....	25	34	109	8.3	60.5	1	Sh.
"	"	"	"	Renown.....	28	35	106	10	63	1	S g.
"	"	"	"	Regent.....	29	36	106	9.7	60.5	2	Sh. G.
"	"	"	"	Rival.....	27	33	109	8.3	62	1	G.
No significant yield difference between varieties.											

JAMES H. BAILEY, BALJENNIE											
3E	12	2	B	Marquis.....	32	38	95	9	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	31	35	95	9.7	63.5	1	S bl.
"	"	"	"	Apex.....	32	37	95	8.7	63.5	1 Hd.	....
"	"	"	"	Renown.....	25	37	95	9.3	64.5	1	S g. I.
"	"	"	"	Regent.....	33	37	95	8	62	1	Bl. Sh.
"	"	"	"	Rival.....	22	39	100	10	62.5	2	Bl. G. I.
Necessary difference—4.1 bushels.											

Wheat Pool District 12—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
LAWRENCE MERKOWSKY, CAVELL											
2D	12	3	A	Marquis.....	15	27	101	10	61.5	1	L w.
"	"	"	"	Thatcher.....	18	28	98	10	59.5	2	L w.
"	"	"	"	Apex.....	12	28	99	10	61	1	L w.
"	"	"	"	Renown.....	11	28	98	10	61	1	S g. I.
"	"	"	"	Regent.....	11	28	98	10	58	3	Sh. G. I.
"	"	"	"	Rival.....	17	29	99	10	61	1	S bl.

Necessary difference—3.3 bushels.

MERVIN HARPER, LUSELAND											
2D	12	4	A	Marquis.....	18	38	93	10	59.5	2	Sh. G.
"	"	"	"	Thatcher.....	22	38	90	9.7	58	2	Sh.
"	"	"	"	Apex.....	19	38	91	9.7	57.5	3	L w.
"	"	"	"	Renown.....	23	37	92	10	59	2	Sh. G.
"	"	"	"	Regent.....	23	38	92	10	56.5	4	Sh. G.
"	"	"	"	Rival.....	24	41	96	10	59.5	2	L w.

No significant yield difference between varieties.

VERDON STEWART FOSTER, KERROBERT											
1B	12	4	B	Marquis.....	30	37	108	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	34	33	108	9.7	64	1	S bl.
"	"	"	"	Apex.....	29	36	110	10	65	1 Hd.	....
"	"	"	"	Renown.....	28	35	110	9.7	65	1 Hd.	....
"	"	"	"	Regent.....	28	34	106	9	64	1 Hd.	....
"	"	"	"	Rival.....	23	38	109	9.7	63.5	1 Hd.	....

No significant yield difference between varieties.

RONALD CHARLES CALDWELL, TAKO											
2D	12	5	A	Marquis.....	....	30	107	9	*	2 E.	B sh.
"	"	"	"	Thatcher.....	....	29	107	10	59	2	Sh.
"	"	"	"	Apex.....	....	28	107	10	*	2 E.	B sh.
"	"	"	"	Renown.....	....	27	106	8	*	3 E.	B sh.
"	"	"	"	Regent.....	....	27	107	7	*	3 E.	B sh.
"	"	"	"	Rival.....	....	30	106	10	60	1	Sh.

Necessary difference—Yields discarded. Damaged by grasshoppers.

JAMES J. ZUNTI, LUSELAND											
2D	12	5	B	Marquis.....	29	37	102	9	65	1 Hd.	....
"	"	"	"	Thatcher.....	27	36	99	9	63.5	1 Hd.	....
"	"	"	"	Apex.....	23	36	101	9	64.5	1 Hd.	....
"	"	"	"	Renown.....	27	37	100	9	64	1 Hd.	....
"	"	"	"	Regent.....	24	34	100	8.7	63.5	1	S g.
"	"	"	"	Rival.....	28	38	102	8.3	63.5	1 Hd.	....

No significant yield difference between varieties.

ALBERT VOLNEY YORK, EVESHAM											
2D	12	6	A	Marquis.....	25	34	103	10	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	29	28	100	10	60.5	1	Bl. Sh.
"	"	"	"	Apex.....	24	32	102	10	62.5	1 Hd.	....
"	"	"	"	Renown.....	26	31	103	10	62.5	1 Hd.	....
"	"	"	"	Regent.....	26	30	102	10	61	1	....
"	"	"	"	Rival.....	28	30	102	10	62.5	1 Hd.	....

No significant yield difference between varieties.

HAROLD W. HARLOW, CACTUS LAKE											
2D	12	6	B	Marquis.....	30	38	108	10	59.5	2	G. I.
"	"	"	"	Thatcher.....	32	38	106	10	59	2	Bl. Sh.
"	"	"	"	Apex.....	31	38	106	10	61.5	1	S g.
"	"	"	"	Renown.....	27	38	102	10	62	2	G. I.
"	"	"	"	Regent.....	32	38	106	10	59.5	2	Sh.
"	"	"	"	Rival.....	30	38	109	10	61.5	2	G. I.

No significant yield difference between varieties.

ORVILLE NELSON, VERA											
2D	12	7	A	Marquis.....	14	....	....	....	64	1 Hd.	....
"	"	"	"	Thatcher.....	13	....	....	....	63.5	1	S g.
"	"	"	"	Apex.....	15	....	....	....	65	1 Hd.	....
"	"	"	"	Renown.....	12	....	....	....	64	1 Hd.	....
"	"	"	"	Regent.....	14	....	....	....	63	1	S g.
"	"	"	"	Rival.....	13	....	....	....	64.5	1 Hd.	....

Nosignificant yield difference between varieties.

LLOYD GEORGE HAMMELL, SENLAC											
2D	12	7	B	Marquis.....	6	18	81	6.3	59	2	Bl. Sh.
"	"	"	"	Thatcher.....	10	23	81	8.7	57.5	3	Bl. Sh.
"	"	"	"	Apex.....	8	24	81	8.7	58.5	2	Bl. Sh.
"	"	"	"	Renown.....	6	23	81	8.7	58.5	2	Sh. G.
"	"	"	"	Regent.....	6	20	81	8	52	5 Spec.	B bl. Sh.
"	"	"	"	Rival.....	9	25	81	10	58	3	B bl. Sh.

No significant yield difference between varieties.

* Insufficient to weigh.

E.—Estimated.

Wheat Pool District 12—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ALBERT DONALD WELLS, MARSDEN											
3E	12	8	A	Marquis.....	23	31	102	9.3	62.5	2	G.
"	"	"	"	Thatcher.....	20	27	100	9.7	59.5	2	Bl. Sh.
"	"	"	"	Apex.....	19	28	101	8.7	62.5	1	S g.
"	"	"	"	Renown.....	21	28	101	10	61.5	1	Sh.
"	"	"	"	Regent.....	19	27	101	9	60	2	Bl. G.
"	"	"	"	Rival.....	24	31	102	8.7	61.5	1	L w.

No significant yield difference between varieties.

CLEMENT COLLINS WAKEFIELD, LILYDALE											
3E	12	8	B	Marquis.....	30	42	103	9	60	1	Sh. S g.
"	"	"	"	Thatcher.....	31	40	98	9.7	61.5	1	Sh. S bl.
"	"	"	"	Apex.....	32	39	99	7.7	58.5	2	Sh. S. g.
"	"	"	"	Renown.....	32	42	101	10	63	1	S g.
"	"	"	"	Regent.....	32	40	98	9	58	3	Sh. G. I.
"	"	"	"	Rival.....	32	45	101	9	60.5	1	Sh.

No significant yield difference between varieties.

WELLS SCHOOL, MARSDEN											
2D	12	8	C	Marquis.....	16	34	....	8.3	62	1	S bl.
"	"	"	"	Thatcher.....	23	33	....	9.3	61.5	2	Bl.
"	"	"	"	Apex.....	21	34	....	8.5	62	1	S bl.
"	"	"	"	Renown.....	22	32	....	9	63	1	S bl.
"	"	"	"	Regent.....	15	33	....	9	60.5	2	Bl. Sh.
"	"	"	"	Rival.....	19	32	....	8.3	61	2	Bl. Sh.

Necessary difference—3.3 bushels.

LAIRD ANDREW BUSCH, CUTKNIFE											
2D	12	9	A	Marquis.....	23	34	103	10	60.5	1	Sh.
"	"	"	"	Thatcher.....	28	33	101	10	59	2	Bl. Sh.
"	"	"	"	Apex.....	23	35	102	8.3	60.5	1	Sh.
"	"	"	"	Renown.....	24	35	99	10	61	1	S sh.
"	"	"	"	Regent.....	23	34	99	8.7	58.5	2	Sh. Sp.
"	"	"	"	Rival.....	23	34	103	8.7	59	2	Sh. F.

No significant yield difference between varieties.

GORDON HAASE, WILKIE											
2D	12	9	B	Marquis.....	13	30	107	8.5	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	16	27	104	9.5	61.5	1	L w.
"	"	"	"	Apex.....	15	29	105	8.5	63	1 Hd.	....
"	"	"	"	Renown.....	15	28	104	8.5	63.5	1 Hd.	....
"	"	"	"	Regent.....	16	30	104	9.5	61	1	Sh. S g.
"	"	"	"	Rival.....	15	31	107	10	63.5	1 Hd.	....

No significant yield difference between varieties.

WILLIAM JAMES BRIDGE, R.R. No. 2, BATTLEFORD											
3E	12	10	A	Marquis.....	32	43	92	8.3	60	Sample	B h.
"	"	"	"	Thatcher.....	36	42	90	9	59	Sample	B h.
"	"	"	"	Apex.....	32	42	93	6.3	61	Sample	B h.
"	"	"	"	Renown.....	31	41	89	9	62	Sample	B h.
"	"	"	"	Regent.....	34	43	91	8.3	59	Sample	B h.
"	"	"	"	Rival.....	32	43	92	6.7	60	Sample	B h.

No significant yield difference between varieties.

BRUCE E. SMITH, BATTLEFORD											
3E	12	10	B	Marquis.....	....	36	....	10	....	....	....
"	"	"	"	Thatcher.....	....	36	....	9.7	....	....	....
"	"	"	"	Apex.....	....	36	....	8.3	....	....	....
"	"	"	"	Renown.....	....	37	....	9.7	....	....	....
"	"	"	"	Regent.....	....	37	....	8.3	....	....	....
"	"	"	"	Rival.....	....	37	....	9.7	....	....	....

No samples received.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2D 12 3 B Billy Gernschied, Handel.

NOTE.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 13

Cereal variety zone	Dist.	Sub- dist.	Test designa- tion	Varieties	Yield bus. per acre	Plant height in inches	Days seed- ing to ripe	Straw strength	Pounds per measured bushel	Commer- cial grades	Grading remarks
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JOSEPH S. DUH, PLUNKETT

2B	13	1	A	Marquis.....	44	38
..	Thatcher.....	..	35
..	Apex.....	..	37
..	Renown.....	..	36
..	Regent.....	..	33
..	..	..	..	Rival.....	..	37	....	....	....	....	....

No samples received.

CAMERON W. GINGRICH, GUERNSEY

2B	13	1	B	Marquis.....	44	40	111	10	65.5	1 Hd.	....
..	..	..	..	Thatcher.....	49	38	110	8	65	1 Hd.	....
..	..	..	..	Apex.....	46	39	110	10	65	1 Hd.	....
..	..	..	..	Renown.....	45	38	109	10	66	1 Hd.	....
..	..	..	..	Regent.....	44	39	110	9	63.5	1 Hd.	....
..	..	..	..	Rival.....	44	39	110	9	64	1 Hd.	....

No significant yield difference between varieties.

REAY RODDICK, COLONSAY

2B	13	2	A	Marquis.....	23	37	115	8.3	65	1	S g.
..	..	..	..	Thatcher.....	22	34	114	8	64.5	1	S g.
..	..	..	..	Apex.....	21	34	114	7.3	64	1	S g.
..	..	..	..	Renown.....	17	35	114	7.3	64.5	1	S g.
..	..	..	..	Regent.....	19	36	114	6.3	63.5	1	S g.
..	..	..	..	Rival.....	23	38	115	9	64	1	S g.

No significant yield difference between varieties.

HARRY BENTON, WATROUS

2B	13	2	B	Marquis.....	21	....	....	....	63	1 Hd.	....
..	..	..	..	Thatcher.....	22	....	....	....	61	1	S bl.
..	..	..	..	Apex.....	16	....	....	....	63	1 Hd.	....
..	..	..	..	Renown.....	21	....	....	....	64	1 Hd.	....
..	..	..	..	Regent.....	22	....	....	....	61.5	1	Sh.
..	..	..	..	Rival.....	18	....	....	....	61.5	1	S bl.

No significant yield difference between varieties.

NORMAN WOLDEN, YOUNG

2B	13	2	C	Marquis.....	27	37	100	9.7	60.5	1	Sh.
..	..	..	..	Thatcher.....	38	37	98	9.7	61	1	Sh.
..	..	..	..	Apex.....	27	38	99	9.7	61	1	Sh.
..	..	..	..	Renown.....	28	38	98	9.4	61.5	1	L w.
..	..	..	..	Regent.....	30	38	100	9.8	59	2	Sh.
..	..	..	..	Rival.....	33	40	99	9.4	60.5	1	Sh.

Necessary difference—4.2 bushels.

BURTON COWIE, DUNDURN

2B	13	3	A	Marquis.....	25	32	109	10	64	1 Hd.	....
..	..	..	..	Thatcher.....	21	29	104	10	64.5	1 Hd.	....
..	..	..	..	Apex.....	25	30	107	9.3	64.5	1 Hd.	....
..	..	..	..	Renown.....	22	29	103	10	65.5	1 Hd.	....
..	..	..	..	Regent.....	24	29	102	10	63	1 Hd.	....
..	..	..	..	Rival.....	26	34	107	9.3	64	1 Hd.	....

No significant yield difference between varieties.

WILLIAM PEASLEY, DUNDURN

2B	13	3	B	Marquis.....	....	28	106	9	....	....	....
..	..	..	..	Thatcher.....	....	35	112	8	....	....	....
..	..	..	..	Apex.....	....	36	112	9	....	....	....
..	..	..	..	Renown.....	....	36	112	9	....	....	....
..	..	..	..	Regent.....	....	37	111	7	....	....	....
..	..	..	..	Rival.....	....	40	106	10	....	....	....

Yields rejected. Samples incomplete.

EDWIN J. BITZ, ALLAN

2B	13	3	C	Marquis.....	33	....	....	....	65	1 Hd.	....
..	..	..	..	Thatcher.....	35	....	....	....	65	1 Hd.	....
..	..	..	..	Apex.....	31	....	....	....	65	1 Hd.	....
..	..	..	..	Renown.....	30	....	....	....	66	1 Hd.	....
..	..	..	..	Regent.....	36	....	....	....	64	1 Hd.	....
..	..	..	..	Rival.....	25	....	....	....	65	1 Hd.	....

No significant yield difference between varieties.

DAVID K. BLACK, BLUCHER

2B	13	4	A	Marquis.....	16	....	....	....	63.5	1 Hd.	....
..	..	..	..	Thatcher.....	18	....	....	....	61	1	S bl.
..	..	..	..	Apex.....	15	....	....	....	62	1	S g. I.
..	..	..	..	Renown.....	16	....	....	....	62	1	S g. I.
..	..	..	..	Regent.....	16	....	....	....	60	2	Sh. G.
..	..	..	..	Rival.....	16	....	....	....	62.5	1	S g. I.

No significant yield difference between varieties.

Wheat Pool District 13—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ROBERT E. MENZIE, R.R. No. 3, SASKATOON											
2B	13	4	B	Marquis.....	23	24	110	9	63	1 Hd.	....
"	"	"	"	Thatcher.....	27	24	107	9	62	1 Hd.	....
"	"	"	"	Apex.....	22	24	109	8.3	63	1 Hd.	....
"	"	"	"	Renown.....	20	23	109	9	63	1 Hd.	....
"	"	"	"	Regent.....	23	23	109	9	61	1	L w.
"	"	"	"	Rival.....	23	25	110	9	63.5	1 Hd.	....
No significant yield difference between varieties.											
MAURICE ALLAN MARTIN, DELISLE											
2B	13	5	B	Marquis.....	22	31	90	8.3	61.5	1	Sh.
"	"	"	"	Thatcher.....	25	29	86	10	62	1 Hd.	....
"	"	"	"	Apex.....	21	30	88	8.7	61	1	Sh.
"	"	"	"	Renown.....	24	30	87	10	63	1 Hd.	....
"	"	"	"	Regent.....	21	30	89	9	61.5	1	Sh.
"	"	"	"	Rival.....	24	32	90	9.3	62.5	1 Hd.	....
No significant yield difference between varieties.											
HERBERT JOHN PORTER, FEUDAL											
2B	13	6	A	Marquis.....	19	43	100	8.7	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	23	39	96	8.7	63.5	1 Hd.	....
"	"	"	"	Apex.....	18	39	98	7.7	64.5	1 Hd.	....
"	"	"	"	Renown.....	22	37	96	8	65	1 Hd.	....
"	"	"	"	Regent.....	20	38	97	8	63	1	S g.
"	"	"	"	Rival.....	13	41	98	6	63	1 Hd.	....
No significant yield difference between varieties.											
LORNE RAYMOND THOMPSON, ABERDEEN											
2B	13	7	A	Marquis.....	19	24	108	7.3	61	1	....
"	"	"	"	Thatcher.....	24	25	106	8.7	60	2	Sh. I. P.
"	"	"	"	Apex.....	20	24	107	6.3	62	1	....
"	"	"	"	Renown.....	20	25	103	6.7	61.5	1	S sh.
"	"	"	"	Regent.....	17	24	106	5.7	59	2	Sh.
"	"	"	"	Rival.....	22	25	107	7	61.5	1	....
No significant yield difference between varieties.											
JACOB D. HEIN, OSLER											
2B	13	7	B	Marquis.....	29	41	107	9.6	61.5	1	L w.
"	"	"	"	Thatcher.....	35	38	103	8.7	60.5	1	Sh.
"	"	"	"	Apex.....	30	40	105	7.1	61.5	1	Sh.
"	"	"	"	Renown.....	27	42	103	9.6	63.5	1 Hd.	....
"	"	"	"	Regent.....	32	39	103	8.4	61	1	Sh.
"	"	"	"	Rival.....	28	41	103	8.8	62	1 Hd.	....
Necessary difference—3.5 bushels.											
J. E. BLAIN, PRUD'HOMME											
2B	13	8	A	Marquis.....	31	32	107	8.7	65.5	1 Hd.	....
"	"	"	"	Thatcher.....	35	29	106	8.7	64.5	1	S bl.
"	"	"	"	Apex.....	26	30	108	8.7	65	1 Hd.	....
"	"	"	"	Renown.....	27	29	106	8.3	65	1	S g.
"	"	"	"	Regent.....	29	30	106	8.3	63	1	S g.
"	"	"	"	Rival.....	26	32	108	9.3	65	1 Hd.	....
Necessary difference—4.1 bushels.											
STEPHEN T. SCHWAGA, TOTZKE											
2B	13	8	B	Marquis.....	30	33	102	10	63	1 Hd.	....
"	"	"	"	Thatcher.....	38	35	98	10	62.5	1	Sh. Bl.
"	"	"	"	Apex.....	33	35	98	9	61.5	1	Sh.
"	"	"	"	Renown.....	35	33	98	9.8	62	1	Sh. S g.
"	"	"	"	Regent.....	34	35	98	10	61.5	1	Sh.
"	"	"	"	Rival.....	35	34	102	9.5	61.5	1 Hd.	....
No significant yield difference between varieties.											
PAUL W. BOKSHOWAN, ALVENA											
3E	13	9	A	Marquis.....	22	40	109	8	63	1 Hd.	....
"	"	"	"	Thatcher.....	28	40	107	7.7	62	1	S bl.
"	"	"	"	Apex.....	15	42	106	7.7	60	1	Bl. Sh.
"	"	"	"	Renown.....	19	37	108	8.7	62.5	1	S bl.
"	"	"	"	Regent.....	23	42	105	9.3	61	2	Bl. Sh.
"	"	"	"	Rival.....	21	46	106	7.7	60.5	2	Bl. Sh.
Necessary difference—3.9 bushels.											
DMYTRO HNIDY, WAKAW											
4A	13	9	B	Marquis.....	33	40	....	10	61.5	1	L w.
"	"	"	"	Thatcher.....	32	37	....	8.7	59.5	2	Bl. Sh.
"	"	"	"	Apex.....	33	38	....	7.7	60	1	Bl. Sh.
"	"	"	"	Renown.....	36	37	....	8.7	62	1	S bl.
"	"	"	"	Regent.....	32	36	....	9	58	3	Bl. Sh. G. I.
"	"	"	"	Rival.....	31	38	....	8.7	60	2	Bl. Sh.
No significant yield difference between varieties.											

Wheat Pool District 13—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
WALTER HEIDECHER, MIDDLE LAKE											
4A	13	10	A	Marquis.....	25	33	....	7.7	64	1	S bl.
..	Thatcher.....	31	32	....	8.7	63	2	Bl.
..	Apex.....	28	34	....	9.7	62.5	1	S bl.
..	Renown.....	25	33	....	10	65	1	S bl.
..	Regent.....	30	33	....	9.3	62.5	2	Bl.
..	Rival.....	26	35	....	9.7	62.5	1	S bl.

No significant yield difference between varieties.

HARVEY A. KROLL, ST. BENEDICT											
4A	13	10	B	Marquis.....	41	42	111	8	64.5	1 Hd.	....
..	..	..	..	Thatcher.....	49	40	109	8.3	63.5	1 Hd.	....
..	..	..	..	Apex.....	45	44	107	7.7	64	1 Hd.	....
..	..	..	..	Renown.....	47	43	109	8.3	65	1 Hd.	....
..	..	..	..	Regent.....	46	43	108	8.3	64	1 Hd.	....
..	..	..	..	Rival.....	40	44	108	7.7	63.5	1 Hd.	....

No significant yield difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2B 13 5 A Joe L. Waldner, Langham.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 14

ROY GEORGE HENDREN, KELVINGTON											
3C	14	1	A	Marquis.....	46	38	102	8.7	64	2	St.
..	..	..	..	Thatcher.....	41	39	101	9.7	64	2	St.
..	..	..	..	Apex.....	44	38	102	9	64	2	St.
..	..	..	..	Renown.....	41	39	102	9.3	65	1 Hd.	....
..	..	..	..	Regent.....	36	38	101	9.3	62.5	2	St.
..	..	..	..	Rival.....	43	33	101	9	63	1	S st.

No significant yield difference between varieties.

ROBERT GIBB, LINTLAW											
4A	14	1	B	Marquis.....	31	29	117	9	65	3	G.
..	..	..	..	Thatcher.....	34	30	107	9	64	3	G. I.
..	..	..	..	Apex.....	35	30	114	9	65	2	G.
..	..	..	..	Renown.....	30	30	115	9	65	2	G.
..	..	..	..	Regent.....	32	30	115	9	64.5	3	G.
..	..	..	..	Rival.....	34	32	114	6	64	3	G.

No significant yield difference between varieties.

BERT OTTO ANDERSON, HENDON											
3C	14	2	A	Marquis.....	36	41	106	8	65.5	1 Hd.	....
..	..	..	..	Thatcher.....	43	39	100	9	65.5	1 Hd.	....
..	..	..	..	Apex.....	32	39	102	8.7	65.5	1 Hd.	....
..	..	..	..	Renown.....	35	39	102	9	66	1 Hd.	....
..	..	..	..	Regent.....	33	39	105	8.3	65	1 Hd.	....
..	..	..	..	Rival.....	37	42	106	9	65.5	1 Hd.	....

Necessary difference—2.2 bushels.

FREDERICK BOHL, MARGO											
3C	14	2	B	Marquis.....	47	43	111	9	63.5	1 Hd.	....
..	..	..	..	Thatcher.....	53	42	111	8.3	63	1 Hd.	....
..	..	..	..	Apex.....	49	43	111	8.7	63.5	1 Hd.	....
..	..	..	..	Renown.....	47	42	111	10	64.5	1 Hd.	....
..	..	..	..	Regent.....	54	42	111	9.3	62.5	1	S p.
..	..	..	..	Rival.....	40	45	111	9	63	1 Hd.	....

Necessary difference—4.6 bushels.

ARTHUR JONES, QUILL LAKE											
3C	14	3	A	Marquis.....	29	28	112	7.7	63	2	S g. I. S f.
..	..	..	..	Thatcher.....	37	27	109	10	63.5	2	Bl. S g. I.
..	..	..	..	Apex.....	22	25	111	9	62.5	2	Bl. S g. I.
..	..	..	..	Renown.....	37	28	111	10	64.5	2	G. I. S f.
..	..	..	..	Regent.....	42	28	111	10	62.5	3	G. I. F.
..	..	..	..	Rival.....	26	27	111	10	62	3	Bl. I. F.

Necessary difference—6.2 bushels.

LEO McGRATH, R.R. No. 1, LANIGAN											
3C	14	3	B	Marquis.....	26	42	....	....	60	2	Sh. Bl.
..	..	..	..	Thatcher.....	28	42	....	....	60	3	B bl.
..	..	..	..	Apex.....	29	43	....	....	59.5	3	B sh.
..	..	..	..	Renown.....	29	43	....	....	62	2	Bl.
..	..	..	..	Regent.....	31	42	....	....	58	3	Bl. Sh. I.
..	..	..	..	Rival.....	28	44	....	....	58	3	Bl. Sh.

No significant yield difference between varieties.

Wheat Pool District 14—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
TONY M. MESCHISHNICK, ST. GREGOR											
3C	14	4	A	Marquis.....	38	....	....	....	62.5	1	G.
"	"	"	"	Thatcher.....	43	....	....	....	62	1	Bl.
"	"	"	"	Apex.....	36	....	....	....	62	1	S g.
"	"	"	"	Renown.....	40	....	....	....	64	1	S g.
"	"	"	"	Regent.....	39	....	....	....	61	2	Sh. G.
"	"	"	"	Rival.....	37	....	....	....	62	1	S g.
No significant yield difference between varieties.											
WILLARD A. ANDERSON, LAKE LENORE											
3C	14	4	B	Marquis.....	32	36	101	8	61	3	V g.
"	"	"	"	Thatcher.....	40	38	99	9	59	2	Bl. Sh.
"	"	"	"	Apex.....	31	40	100	8	60.5	2	Sh. G.
"	"	"	"	Renown.....	32	41	99	8	61	2	Sh. G.
"	"	"	"	Regent.....	30	42	99	8	56.5	4	B sh. G.
"	"	"	"	Rival.....	33	38	102	6	60	2	Sh. S g.
No significant yield difference between varieties.											
ERIC E. RINGSTROM, SPALDING											
3C	14	5	A	Marquis.....	45	31	114	9	65.5	1 Hd.	....
"	"	"	"	Thatcher.....	48	30	111	7.3	65	1 Hd.	....
"	"	"	"	Apex.....	41	31	111	8.3	65.5	1 Hd.	....
"	"	"	"	Renown.....	42	32	113	8	65.5	1 Hd.	....
"	"	"	"	Regent.....	42	32	113	8.3	64.5	1 Hd.	....
"	"	"	"	Rival.....	48	31	111	9	65	1 Hd.	....
Necessary difference—Yields bulked.											
DONALD SMITH YOUNG, PLEASANTDALE											
4A	14	5	C	Marquis.....	35	37	....	8.7	64	1 Hd.	....
"	"	"	"	Thatcher.....	39	34	....	8	63.5	1	S g.
"	"	"	"	Apex.....	35	35	....	8.3	64	1 Hd.	....
"	"	"	"	Renown.....	31	34	....	8.3	64.5	1	S g.
"	"	"	"	Regent.....	36	36	....	7.3	63	1	S g.
"	"	"	"	Rival.....	35	38	....	9	64	1	S g.
Necessary difference—2.9 bushels.											
EARL SYLVESTER NOMELAND, NORA											
3C	14	6	A	Marquis.....	75	42	109	10	64	1	I.
"	"	"	"	Thatcher.....	82	42	109	10	64	1	St. L. f.
"	"	"	"	Apex.....	81	42	109	10	65	1	L f.
"	"	"	"	Renown.....	82	42	102	10	65	1 Hd.	S b p.
"	"	"	"	Regent.....	81	42	102	10	64	2	L f.
"	"	"	"	Rival.....	80	45	109	10	63	4	F.
No significant yield difference between varieties.											
JOHN WEBER, McKAGUE											
4A	14	6	B	Marquis.....	25	34	107	8	58	3	Sh. G.
"	"	"	"	Thatcher.....	28	32	104	8.7	58	3	Sh. G.
"	"	"	"	Apex.....	23	34	107	9	58	2	Sh.
"	"	"	"	Renown.....	24	34	104	8.7	59.5	2	G.
"	"	"	"	Regent.....	28	35	105	9	58	3	Sh. G.
"	"	"	"	Rival.....	25	35	107	5.3	59.5	2	Sh. G.
No significant yield difference between varieties.											
CLAYTON A. ANGELL, MERLE											
4A	14	6	C	Marquis.....	59	48	116	8.7	65	2	St.
"	"	"	"	Thatcher.....	69	43	110	9.5	65	1	S st.
"	"	"	"	Apex.....	57	45	110	8.4	64.5	2	St. S b p.
"	"	"	"	Renown.....	61	44	108	8.5	66	2	St. G. B p.
"	"	"	"	Regent.....	63	42	108	9.8	64	1	S bl.
"	"	"	"	Rival.....	58	49	109	7.7	64	2	St.
No significant yield difference between varieties.											
ARCHIE TAYLOR GROAT, ETHELTON											
3D	14	7	A	Marquis.....	33	37	112	8	60	3	Bl. Sh.
"	"	"	"	Thatcher.....	41	38	106	10	61	2	Bl. Sh.
"	"	"	"	Apex.....	29	38	107	8	62	2	Bl.
"	"	"	"	Renown.....	34	35	108	9	61	3	Bl. G.
"	"	"	"	Regent.....	35	38	106	8	57	3	B bl. G.
"	"	"	"	Rival.....	42	39	105	9	60.5	2	Bl. G.
Necessary difference—3.9 bushels.											
SELMAN W. BOYD, MELFORT											
3D	14	7	B	Marquis.....	8	38	107	10	64	1 Hd.	....
"	"	"	"	Thatcher.....	11	36	102	9	65	1 Hd.	....
"	"	"	"	Apex.....	7	40	108	10	65.5	1 Hd.	....
"	"	"	"	Renown.....	11	38	106	10	65.5	1 Hd.	....
"	"	"	"	Regent.....	7	39	106	10	64	1 Hd.	....
"	"	"	"	Rival.....	8	39	103	10	64	1 Hd.	....
Necessary difference—Yields bulked.											

Wheat Pool District 14—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
WILLIAM ELROY WRIGHT, STAR CITY											
3D	14	7	C	Marquis.....	41	43	100	10	64.5	3	V st. G. I.
"	"	"	"	Thatcher.....	58	44	100	9.7	65	2	St. G. I.
"	"	"	"	Apex.....	41	46	100	6.7	64.5	2	G. I. B p.
"	"	"	"	Renown.....	45	44	100	10	66	1	S g. I.
"	"	"	"	Regent.....	46	48	100	9.7	64.5	2	G. I.
"	"	"	"	Rival.....	49	51	100	7.7	64.5	2	G. I. B p.
Necessary difference—6.5 bushels.											

DOUGALD FOY, BJORKDALE											
4A	14	8	A	Marquis.....	....	43	....	....	....	....	....
"	"	"	"	Thatcher.....	....	41	....	....	....	....	....
"	"	"	"	Apex.....	....	40	....	....	....	....	....
"	"	"	"	Renown.....	....	42	....	....	....	....	....
"	"	"	"	Regent.....	....	41	....	....	....	....	....
"	"	"	"	Rival.....	....	43	....	....	....	....	....
Not harvested.											

EDWIN V. WRIGHT, R.R. No. 1, TISDALE											
3D	14	8	B	Marquis.....	41	....	....	....	65	1	St.
"	"	"	"	Thatcher.....	51	....	....	....	65.5	1 Hd.	....
"	"	"	"	Apex.....	47	....	....	....	64	1 Hd.	....
"	"	"	"	Renown.....	45	....	....	....	66	1 Hd.	....
"	"	"	"	Regent.....	39	....	....	....	63.5	1	St. S g.
"	"	"	"	Rival.....	52	....	....	....	64.5	1	St.
No significant yield difference between varieties.											

ELTON W. McDONALD, ARMLEY											
3D	14	9	A	Marquis.....	32	35	117	7.3	62	1 Hd.	....
"	"	"	"	Thatcher.....	45	32	118	8.3	64.5	1 Hd.	....
"	"	"	"	Apex.....	36	30	120	6.3	65	1 Hd.	....
"	"	"	"	Renown.....	31	35	118	8.3	66	1 Hd.	....
"	"	"	"	Regent.....	41	36	118	8.3	64	1 Hd.	....
"	"	"	"	Rival.....	48	38	119	9	65	1 Hd.	....
Necessary difference—5.4 bushels.											

DUNCAN K. TAYLOR, RIDGEDALE											
3D	14	9	B	Marquis.....	42	48	95	8.7	64	2	G.
"	"	"	"	Thatcher.....	50	47	96	9	63.5	2	G.
"	"	"	"	Apex.....	38	48	96	8.3	63	1	S g.
"	"	"	"	Renown.....	45	47	97	9	65	1	S g.
"	"	"	"	Regent.....	40	47	96	8.7	62.5	3	Sh. G.
"	"	"	"	Rival.....	38	48	96	8.7	63	2	G.
No significant yield difference between varieties.											

BOYD MURRAY ROBERTS, NIPAWIN											
3D	14	10	A	Marquis.....	25	35	118	9.7	63	4	St.
"	"	"	"	Thatcher.....	24	33	118	9.3	62.5	4	St.
"	"	"	"	Apex.....	32	37	117	9.3	63	4	St. B p.
"	"	"	"	Renown.....	25	36	118	9.3	64	3	St.
"	"	"	"	Regent.....	24	35	118	9.3	62	4	St.
"	"	"	"	Rival.....	23	38	116	9	62	4	St.
No significant yield difference between varieties.											

STANLEY WALL, PONTRILAS											
3D	14	10	B	Marquis.....	33	29	107	7	65.5	1 Hd.	....
"	"	"	"	Thatcher.....	33	28	106	9	64.5	1	S b p.
"	"	"	"	Apex.....	28	28	107	6	65	1 Hd.	....
"	"	"	"	Renown.....	29	28	105	9	65.5	1	S g.
"	"	"	"	Regent.....	41	30	102	9	64.5	1	S g.
"	"	"	"	Rival.....	45	33	106	10	64.5	1	B p.
Necessary difference—5.5 bushels.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

3C 14 5 B Charles W. Boman, LacVert.

NOTE.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 15

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
JAMES ALLAN MACLEOD, CRYSTAL SPRINGS											
4A	15	1	B	Marquis.....	46	40	103	10	63	1	S g.
"	"	"	"	Thatcher.....	53	38	101	9.7	63	1	S g.
"	"	"	"	Apex.....	46	42	101	8.7	64.5	1 Hd.	"
"	"	"	"	Renown.....	49	42	103	9.7	64	1	S g.
"	"	"	"	Regent.....	45	36	103	9.7	62	1	S g.
"	"	"	"	Rival.....	48	41	101	8	63.5	1	S g.
No significant yield difference between varieties.											
WILFRED R. HODGINS, DOMREMY											
3E	15	2	A	Marquis.....	46	46	....	10	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	58	44	....	9.7	63	1	Bl.
"	"	"	"	Apex.....	47	46	....	10	62.5	1 Hd.	....
"	"	"	"	Renown.....	58	46	....	10	65	1 Hd.	....
"	"	"	"	Regent.....	52	46	....	9.7*	61	1	Bl.
"	"	"	"	Rival.....	41	48	....	10	62	1	Bl.
Necessary difference—6.9 bushels.											
WILFRED LORNE ACORN, DAVIS											
3E	15	2	B	Marquis.....	21	42	106	5.7	59	3	Sh. P.
"	"	"	"	Thatcher.....	21	38	99	9	56	4	Sh.
"	"	"	"	Apex.....	23	42	99	7.7	60	2	Sh.
"	"	"	"	Renown.....	26	41	94	9.7	61	2	Sh. P.
"	"	"	"	Regent.....	27	41	94	9.3	58	3	Sh. P.
"	"	"	"	Rival.....	25	44	101	9	58	3	Sh.
No significant yield difference between varieties.											
EMILE BLANCHARD, JR., DUCK LAKE											
3E	15	3	A	Marquis.....	29	39	82	9.7	62.5	2 Rej.	Mxd. h.
"	"	"	"	Thatcher.....	38	36	82	10	61	3 Rej.	Mxd. h.
"	"	"	"	Apex.....	34	38	84	10	62	1 Rej.	Mxd. h.
"	"	"	"	Renown.....	34	37	80	9.7	63	2 Rej.	Mxd. h.
"	"	"	"	Regent.....	35	39	82	10	61.5	2 Rej.	Mxd. h.
"	"	"	"	Rival.....	32	39	84	9.7	60	3 Rej.	Mxd. h.
No significant yield difference between varieties.											
WM. FREDERICK ANDERSON, DUCK LAKE											
3E	15	3	B	Marquis.....	50	45	112	8	65	4	V g.
"	"	"	"	Thatcher.....	50	41	111	6.5	64.5	3	G.
"	"	"	"	Apex.....	40	42	110	6.5	64.5	1 Hd.	....
"	"	"	"	Renown.....	40	44	108	10	65	1 Hd.	....
"	"	"	"	Regent.....	45	42	109	9	64	1	S g.
"	"	"	"	Rival.....	45	48	109	7	65	1 Hd.	....
Necessary difference—5.1 bushels.											
CLEMENT BONTHOUS, CARLTON											
3E	15	4	B	Marquis.....	29	44	101	8.3	60	1	Sh.
"	"	"	"	Thatcher.....	28	40	100	9.7	59.5	2	Sh.
"	"	"	"	Apex.....	32	47	100	7.7	60.5	1	S sh.
"	"	"	"	Renown.....	31	46	100	9.7	61	1	S sh.
"	"	"	"	Regent.....	36	45	99	8.7	60.5	2	Sh. S g.
"	"	"	"	Rival.....	33	47	95	8.7	59.5	2	Sh.
No significant yield difference between varieties.											
CHARLES EDWARD LEASK, MARCELIN											
3E	15	5	A	Marquis.....	26	35	....	9	59.5	3	G.
"	"	"	"	Thatcher.....	31	33	....	9.3	61	3	G.
"	"	"	"	Apex.....	31	33	....	9.3	60	3	G.
"	"	"	"	Renown.....	33	33	....	9.3	62.5	2	S g.
"	"	"	"	Regent.....	31	33	....	9.3	60	4	V g.
"	"	"	"	Rival.....	35	33	....	10	61	1	S g.
No significant yield difference between varieties.											
ERNEST ARNOLD COATES, LEASK											
3E	15	5	B	Marquis.....	....	37	115	8.7	....	....	....
"	"	"	"	Thatcher.....	....	36	111	8.3	....	....	....
"	"	"	"	Apex.....	....	36	113	8	....	....	....
"	"	"	"	Renown.....	....	38	116	8.5	....	....	....
"	"	"	"	Regent.....	....	38	113	8.8	....	....	....
"	"	"	"	Rival.....	....	40	115	8.7	....	....	....
No yields. Destroyed by chickens.											
MERVIN L. MADSEN, AVEBURY											
3E	15	6	A	Marquis.....	....	48	99	7.3	....	....	....
"	"	"	"	Thatcher.....	....	46	97	6.3	....	....	....
"	"	"	"	Apex.....	....	45	98	5.3	....	....	....
"	"	"	"	Renown.....	....	46	96	9	....	....	....
"	"	"	"	Regent.....	....	45	97	8	....	....	....
"	"	"	"	Rival.....	....	52	100	4.3	....	....	....
Partly destroyed by mice. Yields discarded.											

Wheat Pool District 15—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
ALLYN WESLEY WOOD, LADDER VALLEY											
4B	15	6	B	Marquis.....	29	40	105	10	64	3	V st.
"	"	"	"	Thatcher.....	34	35	101	10	65	2	St.
"	"	"	"	Apex.....	31	33	101	10	64	2	St.
"	"	"	"	Renown.....	31	35	103	10	66	1	S st.
"	"	"	"	Regent.....	33	38	101	10	63	2	St.
"	"	"	"	Rival.....	34	38	106	10	65	2	St.
No significant yield difference between varieties.											
ROBERT V. FINES, MONT NEBO											
3E	15	7	A	Marquis.....	46	37	102	8.3	60	2	P. Sh.
"	"	"	"	Thatcher.....	55	37	100	10	61.5	2	P. Sh.
"	"	"	"	Apex.....	41	37	101	9.2	61.5	1	Sh.
"	"	"	"	Renown.....	43	36	99	8.3	62	2	P. Sh.
"	"	"	"	Regent.....	63	36	98	9.7	52	3	P. Sh. G.
"	"	"	"	Rival.....	60	39	100	8.7	62	2	P. Sh. G.
No significant yield difference between varieties.											
DOUGLAS KELL, CANWOOD											
4B	15	7	B	Marquis.....	15	39	104	10	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	19	38	101	9.3	64.5	1 Hd.	....
"	"	"	"	Apex.....	15	36	104	7.7	65	1 Hd.	....
"	"	"	"	Renown.....	16	37	102	10	66	1 Hd.	....
"	"	"	"	Regent.....	17	39	104	8.7	65	1 Hd.	....
"	"	"	"	Rival.....	17	38	103	10	65	1 Hd.	....
No significant yield difference between varieties.											
JOHN EDWARD MARSHALL, HOLBEIN											
3E	15	8	A	Marquis.....	24	....	110	10	64.5	1 Hd.	....
"	"	"	"	Thatcher.....	20	....	108	10	63	1 Hd.	....
"	"	"	"	Apex.....	18	....	110	6	64.5	1 Hd.	....
"	"	"	"	Renown.....	15	....	106	10	65	1 Hd.	....
"	"	"	"	Regent.....	16	....	108	8	63	1 Hd.	....
"	"	"	"	Rival.....	18	....	108	9	64	1 Hd.	....
No significant yield difference between varieties.											
ALBERT E. PUGH, WILD ROSE											
3E	15	8	B	Marquis.....	35	40	118	8.7	65	1	S g.
"	"	"	"	Thatcher.....	39	41	115	8.3	64.5	1 Hd.	....
"	"	"	"	Apex.....	36	40	116	8.7	65	1 Hd.	....
"	"	"	"	Renown.....	30	41	112	8.3	65.5	1 Hd.	....
"	"	"	"	Regent.....	36	41	116	9	65	1	S g.
"	"	"	"	Rival.....	38	42	115	9	64	1 Hd.	....
No significant yield difference between varieties.											
DAVID S. MITCHELL, WHITE STAR											
3E	15	9	A	Marquis.....	54	39	106	9	64	1	S g.
"	"	"	"	Thatcher.....	67	39	105	8.7	64	2	S bl.
"	"	"	"	Apex.....	50	39	105	8	64	2	G. S b p.
"	"	"	"	Renown.....	57	38	104	9.7	65	1	S bl.
"	"	"	"	Regent.....	55	38	104	7.7	62	2	Bl. S g.
"	"	"	"	Rival.....	60	40	103	9	63	2	Bl. G.
No significant yield difference between varieties.											
THEODORE PACZAY, PADDOCKWOOD											
4B	15	9	B	Marquis.....	49	47	110	10	64.5	1	St. S g.
"	"	"	"	Thatcher.....	50	45	105	10	64	1	S bl.
"	"	"	"	Apex.....	47	44	107	10	64.5	1 Hd.	....
"	"	"	"	Renown.....	50	45	106	10	65.5	1 Hd.	....
"	"	"	"	Regent.....	48	47	105	10	63	1	S g.
"	"	"	"	Rival.....	48	48	106	10	63	1	S g.
No significant yield difference between varieties.											
THOMAS TUBMAN, BROOKSBY											
3D	15	10	A	Marquis.....	24	39	105	10	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	34	38	102	10	63.5	1	Bl.
"	"	"	"	Apex.....	27	38	103	10	64	1 Hd.	....
"	"	"	"	Renown.....	29	37	101	10	64.5	1 Hd.	....
"	"	"	"	Regent.....	32	39	102	10	62.5	1	Sh. G.
"	"	"	"	Rival.....	32	40	104	10	62.5	1	Bl.
No significant yield difference between varieties.											
GUS. LARSON, KINISTINO											
3D	15	10	B	Marquis.....	32	....	....	....	62	1	Sg.
"	"	"	"	Thatcher.....	31	....	....	....	61	1	Bl. Sh.
"	"	"	"	Apex.....	34	....	....	....	62.5	1	Sh.
"	"	"	"	Renown.....	35	....	....	....	62.5	1	S g.
"	"	"	"	Regent.....	38	....	....	....	59.5	2	Sh. S g.
"	"	"	"	Rival.....	39	....	....	....	61.5	1	Sh.
No significant yield difference between varieties.											

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

4A 15 1 A Warren Reid, Crystal Springs. 3E 15 4 A Henry Herbert Riekman, Rosthern.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District and Test Designation.

WHEAT POOL DISTRICT 16

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
LAWRENCE E. McKELLAR, RADISSON											
3E	16	1	A	Marquis.....	43	38	105	10	64	1 Hd.	....
"	"	"	"	Thatcher.....	43	37	103	10	63.5	1 Hd.	....
"	"	"	"	Apex.....	40	37	103	9.7	64	1 Hd.	....
"	"	"	"	Renown.....	39	36	104	10	64.5	1 Hd.	....
"	"	"	"	Regent.....	41	37	105	9.7	63.5	1 Hd.	....
"	"	"	"	Rival.....	40	38	105	10	63.5	1 Hd.	....
Necessary difference—1.8 bushels.											
CHESTER LLOYD FERRIS, FIELDING											
3E	16	1	B	Marquis.....	23	36	....	10	64	1 Hd.	....
"	"	"	"	Thatcher.....	33	36	....	10	64	1 Hd.	....
"	"	"	"	Apex.....	29	36	....	10	64	1 Hd.	....
"	"	"	"	Renown.....	29	36	....	10	65	1 Hd.	....
"	"	"	"	Regent.....	26	36	....	10	63	1 Hd.	....
"	"	"	"	Rival.....	25	36	....	10	64	1 Hd.	....
No significant yield difference between varieties.											
EDWARD P. HUDEK, HAFFORD											
3E	16	2	A	Marquis.....	19	32	102	9.3	62.5	1 Hd.	....
"	"	"	"	Thatcher.....	21	33	101	9.3	58.5	2	Bl. Sh.
"	"	"	"	Apex.....	21	32	101	8.7	60.5	1	Sh.
"	"	"	"	Renown.....	23	34	101	10	62.5	1 Hd.	....
"	"	"	"	Regent.....	20	35	101	9.7	60	1	Sh.
"	"	"	"	Rival.....	20	34	101	9	61.5	1	Sh.
No significant yield difference between varieties.											
RALPH BION LAYMAN, SPEERS											
3E	16	2	B	Marquis.....	20	26	....	9.3	63	4	V g.
"	"	"	"	Thatcher.....	38	30	....	9.6	63.5	2	G. I.
"	"	"	"	Apex.....	21	28	....	9.3	61.5	1	Sh.
"	"	"	"	Renown.....	20	27	....	9.2	63.5	1	S g.
"	"	"	"	Regent.....	25	30	....	9.2	60	3	Sh. G.
"	"	"	"	Rival.....	27	29	....	9.2	62.5	1	S g.
Necessary difference—8.8 bushels.											
JAMES HUMPHREYS, IFFLEY											
3E	16	3	A	Marquis.....	17	22	101	10	64	2	G.
"	"	"	"	Thatcher.....	18	22	100	10	62.5	2	G.
"	"	"	"	Apex.....	16	22	100	10	64	1	S g.
"	"	"	"	Renown.....	15	23	101	10	63	2	G.
"	"	"	"	Regent.....	14	21	101	10	62	2	G.
"	"	"	"	Rival.....	18	24	100	10	63	2	G.
No significant yield difference between varieties.											
WILLIAM GEORGE WYATT, R.R. No. 3, NORTH BATTLEFORD											
3E	16	3	B	Marquis.....	30	43	....	9	59.5	2	Sh. S p.
"	"	"	"	Thatcher.....	32	39	....	9.3	59	2	Sh. Bl.
"	"	"	"	Apex.....	30	42	....	9	60	1	Sh. S bl.
"	"	"	"	Renown.....	30	41	....	9	63	1	Bl. S g.
"	"	"	"	Regent.....	31	43	....	9.7	58.5	2	Sh. S g.
"	"	"	"	Rival.....	30	44	....	9	58.5	2	Bl. Sh.
No significant yield difference between varieties.											
CLAYTON EDGELOW, CAVALIER											
3E	16	4	A	Marquis.....	32	38	101	9	63.5	1 Hd.	....
"	"	"	"	Thatcher.....	35	36	99	10	63	1	S bl.
"	"	"	"	Apex.....	32	37	101	9.3	64	1 Hd.	....
"	"	"	"	Renown.....	30	36	105	9	64	1 Hd.	....
"	"	"	"	Regent.....	31	38	99	9	62.5	1	S g.
"	"	"	"	Rival.....	32	40	103	9	63	1 Hd.	....
No significant yield difference between varieties.											
GEORGES JULLION, ST. HIPPOLYTE											
3E	16	4	B	Marquis.....	....	32	106	8.3	....	....	....
"	"	"	"	Thatcher.....	....	35	106	9	....	....	....
"	"	"	"	Apex.....	....	31	107	8.3	....	....	....
"	"	"	"	Renown.....	....	34	107	8.7	....	....	....
"	"	"	"	Regent.....	....	35	107	8.7	....	....	....
"	"	"	"	Rival.....	....	37	106	8	....	....	....
No samples received.											
KENNETH W. WESSON, MAIDSTONE											
3E	16	5	A	Marquis.....	46	37	102	10	65	5	V g.
"	"	"	"	Thatcher.....	42	32	99	10	64	2	S g.
"	"	"	"	Apex.....	39	37	99	10	64.5	1	S g.
"	"	"	"	Renown.....	44	34	96	9.7	65.5	1	S g.
"	"	"	"	Regent.....	45	36	98	9.7	64.5	2	S g.
"	"	"	"	Rival.....	42	37	101	9	64.5	2	S g.
No significant yield difference between varieties.											

Wheat Pool District 16—Continued

Cereal variety zone	Dist.	Sub- dist.	Test desig- nation	Varieties	Yield bus. per acre	Plant height in inches	Days seed- ing to ripe	Straw strength	Pounds per measured bushel	Commer- cial grades	Grading remarks
JOHN ANGUS CURRIE, BRESAYLOR											
3E	16	5	B	Marquis.....	16	23	93	10	63	1	....
"	"	"	"	Thatcher.....	19	23	93	10	61	1	....
"	"	"	"	Apex.....	16	22	93	10	63	1	....
"	"	"	"	Renown.....	16	24	92	10	63	1 Hd.	....
"	"	"	"	Regent.....	15	23	92	10	60	2	I.
"	"	"	"	Rival.....	17	23	93	10	62	1	....

No significant yield difference between varieties.

JAMES A. RICHARDS, LASHBURN											
3E	16	6	A	Marquis.....	19	30	110	8	63	1 Hd.	....
"	"	"	"	Thatcher.....	30	29	110	8.2	62.5	1	S g.
"	"	"	"	Apex.....	24	30	110	7.8	62	1 Hd.	....
"	"	"	"	Renown.....	17	31	109	7.8	62	1 Hd.	....
"	"	"	"	Regent.....	20	30	109	8	60.5	2	Sh. G.
"	"	"	"	Rival.....	19	30	109	7.2	61	1	L w.

No significant yield difference between varieties.

FRANK J. SUTTON, MARSHALL											
3E	16	6	B	Marquis.....	11	24	131	9	60	1	Sh.
"	"	"	"	Thatcher.....	15	26	118	9	58	2	Bl. Sh.
"	"	"	"	Apex.....	14	28	119	8.7	61	1	L w.
"	"	"	"	Renown.....	15	29	119	9	59	2	Sh. S g.
"	"	"	"	Regent.....	15	38	118	9	58.5	2	Sh.
"	"	"	"	Rival.....	14	26	120	8.3	59.5	2	Sh.

No significant yield difference between varieties.

ELMO PREECE, BOLNEY											
3E	16	7	A	Marquis.....	19	31	110	9.3	62.5	1	S g.
"	"	"	"	Thatcher.....	15	31	105	9.7	62.5	1	S g.
"	"	"	"	Apex.....	17	34	105	9	63	1 Hd.	....
"	"	"	"	Renown.....	16	34	105	9.3	63.5	1 Hd.	....
"	"	"	"	Regent.....	18	33	105	9	62	2	Sh. G.
"	"	"	"	Rival.....	16	32	105	9	62	1	S g.

No significant yield difference between varieties.

W. G. NEWSOME, PARADISE HILL											
3E	16	7	B	Marquis.....	51	47	....	9.7	65	1	S g.
"	"	"	"	Thatcher.....	47	49	....	9.3	65.5	1	S bl.
"	"	"	"	Apex.....	44	48	....	7.7	65	1 Hd.	....
"	"	"	"	Renown.....	59	47	....	9.7	66	1 Hd.	....
"	"	"	"	Regent.....	47	49	....	9.7	64	1	S g.
"	"	"	"	Rival.....	39	51	....	9	64.5	1	S g.

No significant yield difference between varieties.

MILTON A. PROCTOR, MERVIN											
3E	16	8	A	Marquis.....	32	41	101	9.7	63	1 Hd.	....
"	"	"	"	Thatcher.....	38	37	100	10	63.5	1 Hd.	....
"	"	"	"	Apex.....	26	40	100	9	63.5	1 Hd.	....
"	"	"	"	Renown.....	28	38	100	10	64	1 Hd.	....
"	"	"	"	Regent.....	29	38	101	8.3	61.5	1	Sh.
"	"	"	"	Rival.....	27	41	101	8.7	62.5	1 Hd.	....

Necessary difference—4.6 bushels.

JAMES G. COCKBURN, TURTLEFORD											
3E	16	8	B	Marquis.....	41	43	106	9	64	1 Hd.	....
"	"	"	"	Thatcher.....	48	42	105	9	61.5	1	Sh. S bl.
"	"	"	"	Apex.....	34	41	105	5.7	62	1	S g. I.
"	"	"	"	Renown.....	49	44	105	9.3	64	1 Hd.	....
"	"	"	"	Regent.....	47	44	106	8.7	61	1	Sh. Bl.
"	"	"	"	Rival.....	49	47	105	8	63	1 Hd.	....

Necessary difference—4.1 bushels.

WILLIAM WALTER SEYMOUR, FOUR CORNERS											
4B	16	9	A	Marquis.....	....	....	....	....	64	1 Hd.	....
"	"	"	"	Thatcher.....	....	....	....	....	63	1	S bl.
"	"	"	"	Apex.....	....	....	....	....	64	1 Hd.	....
"	"	"	"	Renown.....	....	....	....	....	64.5	1 Hd.	....
"	"	"	"	Regent.....	....	....	....	....	63.5	1 Hd.	....
"	"	"	"	Rival.....	....	....	....	....	63	1	S bl.

Yields incomplete.

WILLIAM B. OXLEY, CATER											
4B	16	9	B	Marquis.....	31	....	....	....	64	1 Hd.	....
"	"	"	"	Thatcher.....	30	....	....	....	61	1	Sh.
"	"	"	"	Apex.....	26	....	....	....	62.5	1 Hd.	....
"	"	"	"	Renown.....	27	....	....	....	64	1 Hd.	....
"	"	"	"	Regent.....	27	....	....	....	63	1 Hd.	....
"	"	"	"	Rival.....	26	....	....	....	62.5	1 Hd.	....

No significant yield difference between varieties.

Wheat Pool District 16—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks
CAMERON McDONALD, EAST ANGLIA											
4B	16	9	C	Marquis.....	18	37	....	10	63	2	G. I.
"	"	"	"	Thatcher.....	23	32	....	9.7	63.5	2	Bl. G.
"	"	"	"	Apex.....	18	37	....	9.7	63	2	G. I.
"	"	"	"	Renown.....	18	36	....	10	62	2	G. F.
"	"	"	"	Regent.....	16	35	....	9.3	64	2	G. F.
"	"	"	"	Rival.....	24	39	....	9.3	64	3	G. F.
Necessary difference—3.3 bushels.											
THOMAS H. LATUS, BAPAUME											
4B	16	10	A	Marquis.....	....	36	110	10	61	2	G.
"	"	"	"	Thatcher.....	....	36	110	10	58	2	Bl. G.
"	"	"	"	Apex.....	....	38	110	10	60.5	1	G.
"	"	"	"	Renown.....	....	37	110	10	61	1	G.
"	"	"	"	Regent.....	....	35	110	10	58	3	Sh. G.
"	"	"	"	Rival.....	....	35	110	10	58	2	G.
Badly hailed. Yields rejected.											
GEORGES FRANCON, LAVENTURE											
4B	16	10	B	Marquis.....	27	37	118	10	65	1 Hd.	....
"	"	"	"	Thatcher.....	27	34	113	9.7	64	1 Hd.	....
"	"	"	"	Apex.....	28	39	113	9.8	64.5	1 Hd.	....
"	"	"	"	Renown.....	23	39	112	9.7	65.5	1 Hd.	....
"	"	"	"	Regent.....	26	37	112	9.5	64	1 Hd.	....
"	"	"	"	Rival.....	30	39	114	9	63.5	1 Hd.	....
No significant yield difference between varieties.											
ABRAHAM UNRAU, MULLINGAR											
3E	16	10	C	Marquis.....	18	34	109	9	64	1 Hd.	....
"	"	"	"	Thatcher.....	21	32	107	9.3	62.5	1 Hd.	....
"	"	"	"	Apex.....	22	34	106	8.7	63.5	1 Hd.	....
"	"	"	"	Renown.....	21	35	106	9.7	64.5	1 Hd.	....
"	"	"	"	Regent.....	20	31	107	9.7	62	1	S g.
"	"	"	"	Rival.....	20	34	107	9	63	1 Hd.	....
No significant yield difference between varieties.											
JACOB A. STOBBE, MULLINGAR											
3E	16	10	D	Marquis.....	36	....	....	....	64.5	4	G. F.
"	"	"	"	Thatcher.....	40	....	....	....	63	3	G. F.
"	"	"	"	Apex.....	37	....	....	....	63.5	2	G.
"	"	"	"	Renown.....	38	....	....	....	64.5	2	G.
"	"	"	"	Regent.....	36	....	....	....	63	3	G. F.
"	"	"	"	Rival.....	34	....	....	....	63.5	2	G.
No significant yield difference between varieties.											

FLAX

The flax project consisted of 22 tests, the tests being located in the areas most suitable for the production of this class of grain. Each test included "Bison," "Redwing," "Crown," and the new variety "Royal." These tests were also sown in a modified latin square but as only four varieties were used the varieties were duplicated in each section. The size of the test was 41 feet by 47 feet, which allowed for 24 plots of four rows, each 10 feet long, twelve inches apart, and also allowed for an outside protection of winter wheat. The tests were separately randomized.

Table No. 24 shows the individual results obtained by each co-operator who conducted one of these tests.

DESCRIPTION OF VARIETIES USED

Bison is a highly wilt resistant variety developed by selection at the North Dakota Agricultural College. It has blue blossoms and fairly large brown seeds of high oil content but only fair oil quality.

Redwing is a highly wilt resistant variety produced by hybridization at the Minnesota College of Agriculture. It has blue blossoms and small brown seeds.

Crown is a highly wilt susceptible variety produced years ago by the North Dakota Agricultural College. Good yields are often obtained on new disease free soil but its susceptibility to wilt makes it an undesirable variety.

Royal is a highly wilt resistant variety selected at the University of Saskatchewan from the susceptible variety Crown. It has blue blossoms and mid-sized brown seeds. Compared to Bison it is higher in oil quality and slightly lower in oil yield.

In studying the following individual results two important factors must not be overlooked:

1. The tests represent the results of one year only and do not constitute satisfactory information upon which to definitely base the choice of a variety to use.

2. In many tests the soil has not previously been sown to flax and the Crown variety did not suffer from wilt disease, thus its comparative performance in this testing project cannot be compared to its probable behaviour if again sown on this particular land.

A comparison between the varieties grown in District 11, the greater part of which is in the northern portion of Cereal Variety Zone 1B, shows that Royal led in yield, outyielding the other varieties by the following differences: Bison 1.1 bushels; Crown 1.8 bushels, and Redwing by 2.9 bushels. Redwing, however, excelled in "earliness," ripening .9 day earlier than Bison, 1.5 days earlier than Crown and 2.2 days earlier than Royal.

A comparison of all tests shows that Royal, the new variety, yielded comparatively well, outyielding the other varieties in many tests. Generally some variation is shown in the comparative yields of the Bison and Redwing varieties but in nearly all tests where "earliness" is reported, Redwing ripened earlier than the other varieties by differences ranging from 2 days to 10 days. The yield of Crown was reasonably satisfactory but it cannot be too strongly stressed that its susceptibility to wilt makes it a highly undesirable variety.

It is also necessary to repeat that the results of this test, representing the comparative behaviour of the different varieties for only one year, are insufficient upon which to base the choice of a variety. It is, however, proposed to conduct a further testing project during the coming season of a more comprehensive nature.

TABLE No. 24

WHEAT POOL DISTRICT 1

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seeding to ripe	Damage by wilt in percentage	Pounds per measured bushel (cleaned)	Commercial grades
EDWARD R. CAMERON, STOUGHTON										
2A	1	9	A	Bison.....	....	16	....	....	....	....
....	....	....	....	Redwing.....	....	14	....	....	....	....
....	....	....	....	Crown.....	....	17	....	....	....	....
....	....	....	....	Royal.....	....	15	....	....	....	....
(Destroyed by grasshoppers.				No yields.)						

WHEAT POOL DISTRICT 2

HARVEY L. GRAY, CEYLON										
1A	2	10	A	Bison.....	2.7	21	....	....	55	1 C.W.
....	....	....	....	Redwing.....	3.8	21	....	....	56	1 C.W.
....	....	....	....	Crown.....	....	....	....	100	....	....
....	....	....	....	Royal.....	2.6	20	....	....	55.5	1 C.W.
Necessary difference—(Yields incomplete.)										

WHEAT POOL DISTRICT 4

MILBURN J. TREMBATH, CABRI										
1B	4	5	A	Bison.....	17	20	95	....	54.5	1 C.W.
....	....	....	....	Redwing.....	14	20	93	....	56	1 C.W.
....	....	....	....	Crown.....	15	20	95	....	55.5	1 C.W.
....	....	....	....	Royal.....	19	20	95	....	55.5	1 C.W.
Necessary difference—1.3 bushels.										

WHEAT POOL DISTRICT 6

VERNON W. JONES, YELLOW GRASS										
2A	6	1	A	Bison.....	....	23	....	....	....	....
....	....	....	....	Redwing.....	....	22	....	....	....	....
....	....	....	....	Crown.....	....	21	....	....	....	....
....	....	....	....	Royal.....	....	22	....	....	....	....
(No samples received).										

KENNETH C. AASEN, LEWVAN										
2A	6	1	B	Bison.....	....	18	....	....	....	....
....	....	....	....	Redwing.....	....	17	....	....	....	....
....	....	....	....	Crown.....	....	17	....	....	....	....
....	....	....	....	Royal.....	....	18	....	....	....	....
(No samples received).										

WHEAT POOL DISTRICT 11

ALFRED R. STROM, KYLE										
1B	11	1	A	Bison.....	7	16	93	....	54.5	1 C.W.
....	....	....	....	Redwing.....	6	16	93	....	54.5	1 C.W.
....	....	....	....	Crown.....	6	16	93	....	54	1 C.W.
....	....	....	....	Royal.....	8	16	93	....	54	1 C.W.
No significant yield difference between varieties.										

H. BYE, LACADENA										
1B	11	1	B	Bison.....	16	20	....	....	54	1 C.W.
....	....	....	....	Redwing.....	13	20	....	....	55	1 C.W.
....	....	....	....	Crown.....	14	21	....	....	54.5	1 C.W.
....	....	....	....	Royal.....	17	21	....	....	54.5	1 C.W.
Necessary difference—(Samples bulked.)										

ROBERT JACKSON, PLATO										
1B	11	2	A	Bison.....	8	18	96	....	54.5	1 C.W.
....	....	....	....	Redwing.....	7	18	96	....	55.5	1 C.W.
....	....	....	....	Crown.....	8	18	96	....	55	1 C.W.
....	....	....	....	Royal.....	10	19	96	....	54.5	1 C.W.
Necessary difference—1.3 bushels.										

Wheat Pool District 11—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seeding to ripe	Damage by wilt in percentage	Pounds per measured bushel (cleaned)	Commercial grades
MISS THELMA REED, ELROSE										
2B	11	2	B	Bison.....	13	18	101	....	54.5	1 C.W.
....	....	....	....	Redwing.....	13	18	101	....	55.5	1 C.W.
....	....	....	....	Crown.....	15	18	101	....	52.5	1 C.W.
....	....	....	....	Royal.....	16	18	101	....	53	1 C.W.
Necessary difference—1.2 bushels.										
JOHN A. WELLBELOVE, Jr., ESTON										
1B	11	3	A	Bison.....	14	11	90	....	55	1 C.W.
....	....	....	....	Redwing.....	12	12	87	....	56	1 C.W.
....	....	....	....	Crown.....	13	11	92	....	55	1 C.W.
....	....	....	....	Royal.....	15	10	98	....	55.5	1 C.W.
Necessary difference—1.0 bushel.										
MARTIN W. DAHL, MANTARIO										
1B	11	4	A	Bison.....	7	17	81	....	55	1 C.W.
....	....	....	....	Redwing.....	6	16	81	....	56	1 C.W.
....	....	....	....	Crown.....	6	16	81	....	56	1 C.W.
....	....	....	....	Royal.....	6	17	81	....	55	1 C.W.
Necessary difference—.8 bushel.										
KENNETH G. BOWMAN, KINDERSLEY										
1B	11	6	A	Bison.....	....	17	....	....	....	....
....	....	....	....	Redwing.....	....	18	....	....	....	....
....	....	....	....	Crown.....	....	18	....	....	....	....
....	....	....	....	Royal.....	....	18	....	....	....	....
(No samples received).										
J. EDIGER, ROSETOWN										
2B	11	7	A	Bison.....	27	25	105	....	55.5	1 C.W.
....	....	....	....	Redwing.....	20	26	101	....	56	1 C.W.
....	....	....	....	Crown.....	20	25	108	....	55	1 C.W.
....	....	....	....	Royal.....	27	27	108	....	54	1 C.W.
Necessary difference—2.8 bushels.										
PETER G. SAWATZKY, HERSCHEL										
2D	11	8	A	Bison.....	6	19	....	....	54	1 C.W.
....	....	....	....	Redwing.....	3	19	....	....	56	1 C.W.
....	....	....	....	Crown.....	5	19	....	....	54.5	1 C.W.
....	....	....	....	Royal.....	7	19	....	....	53	1 C.W.
Necessary difference—1.5 bushels.										
JACK J. WALLACE, STRANRAER										
1B	11	9	A	Bison.....	8	19	88	....	55	1 C.W.
....	....	....	....	Redwing.....	9	19	88	....	56	1 C.W.
....	....	....	....	Crown.....	8	19	88	....	55.5	1 C.W.
....	....	....	....	Royal.....	10	19	88	....	54.5	1 C.W.
No significant yield difference between varieties.										
HAROLD BARCLAY, DRIVER										
1B	11	9	B	Bison.....	13	....	....	....	55	1 C.W.
....	....	....	....	Redwing.....	11	....	....	....	56	1 C.W.
....	....	....	....	Crown.....	14	....	....	....	55.5	1 C.W.
....	....	....	....	Royal.....	14	....	....	....	54.5	1 C.W.
Necessary difference—1.1 bushels.										
IVAN RUSSEL, DEWAR LAKE										
1B	11	10	A	Bison.....	10	21	109	....	54.5	1 C.W.
....	....	....	....	Redwing.....	7	20	109	....	55.5	1 C.W.
....	....	....	....	Crown.....	11	20	109	....	56	1 C.W.
....	....	....	....	Royal.....	12	22	109	....	55.5	1 C.W.
Necessary difference—2.5 bushels.										

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

1B 11 5 A Leonard W. Stevenson, Flaxcombe.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District Sub-district and Test designation.

WHEAT POOL DISTRICT 13

Cereal variety zone	Dist.	Sub- dist.	Test desig- nation	Varieties	Yield bus. per acre	Plant height in inches	Days seeding to ripe	Damage by wilt in per- centage	Pounds per measured bushel (cleaned)	Com- mercial grades
DOUGLAS SPARROW, VANSKOY										
2B	13	5	A	Bison.....	....	21	....	....	....	....
....	....	....	....	Redwing.....	....	21	....	....	....	....
....	....	....	....	Crown.....	....	21	....	....	....	....
....	....	....	....	Royal.....	....	20	....	....	....	....
(No yields received).										

WHEAT POOL DISTRICT 14

BYRON H. BULMER, WHITE FOX										
3D	14	10	A	Bison.....	18	29	112	....	54	1 C.W.
....	....	....	....	Redwing.....	19	32	102	....	56	1 C.W.
....	....	....	....	Crown.....	20	32	115	....	54.5	1 C.W.
....	....	....	....	Royal.....	23	31	115	....	54	1 C.W.
No significant yield difference between varieties.										

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

3C 14 3 A John Donald Alder, Quill Lake.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-district and Test Designation.

WHEAT POOL DISTRICT 15

AXEL J. GOPLEN, PADDOCKWOOD										
3E	15	9	A	Bison.....	11	23	117	....	55	1 C.W.
....	....	....	....	Redwing.....	10	26	110	....	56	1 C.W.
....	....	....	....	Crown.....	11	24	113	....	55.5	1 C.W.
....	....	....	....	Royal.....	14	24	115	....	54.5	1 C.W.
Necessary difference—1.9 bushels.										

CONCLUSIONS

The 1939 variety testing projects as described in the foregoing pages proved to be very successful. Two hundred and seventy-two out of the three hundred and sixty-three tests were brought to a completely satisfactory conclusion and only in a few instances were any tests abandoned, before some useful information was obtained. The projects again demonstrated that complicated exacting variety tests can be supervised satisfactorily by highly intelligent farm boys and girls who have had little or no previous experience in this class of work. Four of the wheat varieties used in the 1939 tests had been used in one or more of the tests conducted in previous years and the data on these varieties proved to be a valuable supplement to that already gathered. The detailed information on the new varieties, while applying to one year only, was also of considerable importance. The flax tests were located only in those areas most suitable for the production of this class of crop. The inclusion of a new flax variety resulted in the gathering of much worthwhile information in connection with the comparative performance of this new variety and the older varieties.

In general the testing projects proved to be eminently successful in several ways. They gave to the co-operators a clear example of an accurate comparative test of varieties. Another result was the demonstration to the co-operators of a part of the work carried on by the Saskatchewan Wheat Pool Organization with the assistance of prominent cerealists and other agencies, toward agricultural welfare. Finally the data obtained from the test should be a valuable aid to farmers in the choice of a variety, as well as furnishing reliable information to the professional advisers in agriculture, upon which they are able to base their recommendations. As a matter of fact the Saskatchewan Cereal Variety Committee use the results of these tests along with those of the experiment stations to formulate recommendations of varieties for the different zones. This committee drew up cereal variety recommendations for 1940 at a recent two-day meeting and these recommendations are now available in a published circular obtainable free from the University Extension Department at Saskatoon, or your nearest Dominion Experiment Station, or the Saskatchewan Department of Agriculture or the Saskatchewan Wheat Pool, Regina.

* * *

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The Officials of the Dominion Experimental Station at Scott.

The Officials of the Dominion Experimental Station at Swift Current.

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